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# FARM ECONOMICS

*Annual Meeting, Urbana, Illinois, August 27-30, 1952*

*International Conference, East Lansing, Mich., Aug. 15-22, 1952*

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# JOURNAL OF FARM ECONOMICS

Volume XXXIV

May, 1952

Number 2

## CHANGES IN SCALE IN COMMERCIAL FARMING AND THEIR IMPLICATIONS<sup>1</sup>

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*Bureau of Agricultural Economics*

THERE remains considerable confusion with respect to contemporary changes in sizes and numbers of farms in the United States. Trends in acreage and output have been subject to many interpretations, partly because of the lack of data for an intelligent evaluation. To some, the trends toward larger farms are sign posts leading toward "factories in the field;" while to others they represent milestones of progress in a period characterized by extremely rapid technological adjustment.

American and British economists have commonly reasoned that technological developments would result in marked increases in the size of farms, but that these increases would continue to be geared to labor resources of the farm family. They feel that agriculture continues to be poorly adapted to the large-scale organization of labor in the factory type of organization. A British economist gives these major reasons for expecting radically different trends in agriculture and industry:

"Blast furnaces in the iron and steel industry, moving belts for assembling different parts in the motor industry and many other types of machines can only be used if assisted by a large number of men. In agriculture this type of machinery is nonexistent. . . . A combine harvester requires one man to drive, another the combine and one to remove the fresh corn (small grain) or three in all. Yet even here these men are not required throughout the year and it is possible to hire some of them temporarily.

"On the whole therefore the advantages of large-scale operation are much less in agriculture than in industry. The greatest of them in industry, the scope given for using more complicated machinery, is of comparatively minor importance in agriculture. On the other hand, the greater difficulties of manage-

<sup>1</sup>This article expresses the writer's personal viewpoints on the problems considered. The author is indebted to J. V. McElveen for assistance in preparing the estimates of commercial farms and criticisms of the paper. Carl P. Heisig, Glen T. Barton, and S. E. Johnson of the Bureau of Agricultural Economics and W. W. Wilcox of the Library of Congress have made helpful comments.

ment as the size of business is increased become important at a far smaller scale in agriculture than in industry."<sup>2</sup>

Brewster in a recent article in *This Journal* has pointed out . . .

" . . . since farm mechanization in no wise increases the number of things which must be done; at the same time it provides no new basis whatever for either functional or task form of specialization. Not only are different forms of specialization thus required by machine industry and agriculture but any exchange of these forms would result in economic inefficiencies."<sup>3</sup>

In contrast to this attitude are the fears of a number of persons in the United States. They point to the large units held by certain individuals and corporations in certain sections of the United States and to the increase in acreages operated by the larger farms.

The views of communist leaders in Russia and other countries are in even more direct conflict. According to Marx, the industrial revolution made inevitable large-scale production and separation of workers and capitalists. More recently, Marxian disciples and communist leaders have applied this doctrine to agriculture.

In his recent bulletin on Soviet agriculture, Volin says:

"The old Marxist belief in the superiority of large-scale methods of production in agriculture, as well as in industry, had been strengthened by Lenin's unbounded enthusiasm for the tractor, which he believed would lead the peasant into the promised land of socialist agriculture.

" . . . Stalin asserted that even pooling in the collective farms of the simple peasant implements and draft power would lead to a great increase in productivity . . . Stalin believed that this effectiveness would be greatly augmented with the introduction of the new machine techniques and tractor farming."<sup>4</sup>

In this setting, an analysis of recent trends in the size of farms in the United States assumes importance. The numbers of "full-time" farms actually have been decreasing much more rapidly than is apparent from over-all statistics. The modern era of mechanical power and equipment in agriculture has greatly increased the size of our business units.

Available evidence suggests, however, that these increases have been no more than consistent with man's ability to care for a larger business. Technological developments have broadened and deepened man's command over resources.

Further, from the standpoint of strengthening the family farm, the problems arising out of the changes in scale may be more in the nature

<sup>2</sup> R. L. Cohen, "Economics of Agriculture," *Cambridge Economics Handbook*, 1940, pp. 51 and 56.

<sup>3</sup> John Brewster, "The Machine Process in Agriculture and Industry," *This Journal*, February, 1950, p. 73.

<sup>4</sup> Lazar Volin, "Survey of Soviet Russian Agriculture," U.S.D.A. Agriculture Monograph No. 5, 1951, pp. 13-15.

of aiding in the adjustments to incorporate modern technology than in trying to guard against a supposed trend toward factory farming. Contrary to popular conceptions, operators of large-scale farms frequently have chosen to substitute capital for labor rather than to increase their size of business consistent with the increased command of labor over other resources. The middle groups of commercial farms have been characterized by the most rapid growth in acreage and output. This has occurred largely by adding land and capital to a relatively fixed labor supply centered around the farm family. The smaller business units in agriculture have faced more difficult problems of adjustment in meeting the challenge inherent in modern technological developments. Their relative importance has increased, and in the current setting they delineate an important sector of inefficiency in the use of farm resources.

### *Trends in Numbers of Farms*

The 5.4 million farms reported in the 1950 Census are separated into two broad groups from the standpoint of operations purposes: (1) *farming* units or what the 1950 Census terms "*commercial*" farms and (2) part-time and residential units. The *commercial* farms or *farming* units refer to the farms which are operated as a business or constitute the major occupation of the farm family. The part-time and residential units, in contrast to the commercial farms, do not furnish the major share of the income for the farm family although some farm operations are conducted.

The separation of these two groups is of basic importance in evaluating recent trends in farm size. When most agricultural economists and farm leaders speak of trends in farms, they refer to the commercial farms or farming units. The number of these commercial farms has declined sharply as farm operations have become more mechanized. According to the method of separation used in this article, estimated numbers of commercial farms dropped from 5.3 million in 1930 to 3.7 million in 1950, or nearly one-third (Table 1).

The reduction in the number of commercial farms has been to a considerable extent offset by the rapid increase in part-time farms and rural homes. Most of the farms in the United States can be characterized as commercial farms. But, small part-time farms and rural residences, numerous in many regions, have been increasing. The total number of operators working off the farm 100 days or more, for example, increased from 0.7 million to 1.3 million from 1930 to 1950. Most of these farmers operate small units for purpose of residence or a supplemental source of income. In addition, there has been an increase in the number of cases where other members of the family are working full time at off-farm work and in the number of older farmers operating small retire-

TABLE 1. TRENDS IN MAJOR GROUPS OF FARMS, 1930, 1940, 1945, AND 1950

Year	Number of Farms		
	All	Commercial <sup>1</sup>	Part-time and Residential <sup>2</sup>
	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>
1930	6,289	5,282	1,007
1940	6,097	4,717	1,380
1945	5,859	4,186	1,673
1950 <sup>3</sup>	5,384	3,708	1,674

<sup>1</sup> Includes farms classified as abnormal in 1950. Includes all farms having a value of product equivalent to \$1,200 sales in 1949 and farms with production equivalent to \$250 to \$1,200 where off-farm income less than farm sales and operator worked off the farm less than 100 days. Number of commercial farms in 1930, 1940 and 1945 are estimated. The following indexes used in deflating value of products in making the estimates were calculated from BAE data.

	1929	1939	1944	1949
Farm price index (1944=100)	75	49	100	127
Output per man hours (1944=100)	68	82	100	120

For a discussion of the Farm Output and Labor Requirements Measures, see Reuben W. Hecht, and Glen T. Barton, "Gains in Productivity of Farm Labor," U.S.D.A. Technical Bulletin 1020, 1950. Data on number of farms by value of product groups for earlier years are given in "General Report" U. S. Census of Agriculture, Vol. II, Ch. X, U.S. Bureau of Census.

<sup>2</sup> The definition of a farm used in the various census enumerations has resulted in some of these farms being included in one census and left out in another. The 1950 definition is most comparable to the definition used in 1930. In the current 1950 Census of Agriculture, according to the United States Bureau of Census, "A maximum of 200,000 of the 480,000 decrease between 1945 and 1950 . . . can be attributed to the change in definition of a farm." U. S. Census Series AC 50-2 April, 1951.

<sup>3</sup> U. S. Bureau of Census, 1950 Census of Agriculture. See J. V. McElveen, and A. T. M. Lee, "A Better Picture of Our Small-Scale Farms," *Agricultural Situation*, March, 1952 for a summary discussion of the 1950 economic classification.

ment units. The estimated numbers of part-time and residential units have increased from one million in 1930 to 1.7 million in 1950.

In making the separation between commercial farms and other units, the 1950 Census definition of commercial farms was used. (Except for the few farms classified as abnormal in 1950 which were included with commercial farms since they could not be separated in the earlier years.) The commercial farms defined in the 1950 Census included: (1) all units with a gross value of sales of \$250 or more in 1949, where the farm operator worked off the farm less than 100 days and the value of farm sales exceeded the off-farm income, and (2) all farms with over \$1,200 value of sales, regardless of the operators' work off the farm or other income.<sup>5</sup>

The criteria used in 1950 provide a general indication of productive employment or income on and off the farm. Most of the farms with less than \$250 sales in 1949 furnished so little productive employment

<sup>5</sup> The criteria for farms with over \$1,200 value of sales were based on the assumption that the larger farms would be operated as business units even though the operator did considerable off-farm work or the family had important sources of off-farm income.



that they can be assumed to be part-time units or to provide a supplemental source of income. In some areas, however, there may be numbers of cases where such farms represent the primary vocational interest of the operator. On the bulk of the part-time farms the operator worked off the farm. Information on operators reporting 100 days or more work off the farm provides a measure of off-farm employment of the operator. The information on whether other income exceeded farm sales provided a supplemental measure of cases where family members worked off the farm or other sources of income, such as pensions or investments, were of primary importance. The value of farm sales provides an indication of the productive employment on the farm.

In developing the estimates of commercial farms for 1930, 1940, and 1945, available information on the number of farms by value of product groups and the number of operators working off the farm by value of product groups were used. In establishing the value of product limits for 1944 and earlier years, the dollar value of product levels were adjusted for changes in prices and in the levels of farm output per unit of labor.<sup>6</sup>

#### *Implication of Recent Trends*

The general agreement that the modern era of mechanical power and equipment in agriculture is materially increasing the size of farm seems fully verified by the trends in acreage and output of the "full-time"

<sup>6</sup>With respect to the value of product limits, classification for 1930 and 1940 are provided only on the basis of the value of products sold and used in the home. Classifications for 1944 were available on both bases and cross classifications were available. In 1949 data are provided only on the value of products sold, consequently the value of products sold was used in relating the 1944 and 1949 data. Gross product limits were then established for 1944 which included the same numbers of farms, and these limits were used as a basis for deflating to establish the levels for earlier years. BAE indexes of farm prices, and farm output per unit of labor were used in estimating value of product limits that would reflect constant levels of productive employment on the farm. (See Footnote 1, Table 1.)

In estimating the numbers of part-time units, estimates are required for certain of the criteria in the earlier years. Data are available by value of product groups on the numbers of farmers working off the farm 100 days or more in 1939 and 1944. In 1930 the number of "abnormal" farms by value of product groups provides a similar basis for estimating the number of farmers working off the farm 150 days or more. Nearly all of the abnormal units in these value groups represented cases in which the operator worked off the farm 150 days or more. The number of farmers working off their farms from 100 to 150 days was estimated on the basis of the relative number of farmers working off the farm 100 to 150 days to those working off the farm 150 days or more for all farms in 1930.

Estimates of the number of additional farms that could be included because incomes from off-farm sources exceeded sales were not available in 1930 and 1945. Data for 1940 are based on special tabulation of information for a sample of 7,000 households from the 1940 Census of Population, Housing, and Agriculture. Indications are that changes in the numbers of part-time farms and numbers of farmers over 65 are related to the numbers of these farms. The numbers in the missing years were estimated by using data on changes in the numbers of aged operators and part-time farms.



farms. Output per commercial farm has more than doubled since 1930 (Table 2). Crop acreage per commercial farm has increased one-third. Farm acreage has increased by more than one-half. Not only has acreage increased but output per acre has been raised. Increased yields, resulting from the use of more fertilizer and a variety of technological advancements as well as the decreased use of farm grown crops for feeding horses and mules, have increased substantially the per acre output of products for market. As a result of the larger acreage multiplied by the higher output per acre, the output per *commercial* farm has been increasing at the rate of more than five per cent per year.

But the emphasis on the essential differences between agriculture and industry, with respect to suitability for large-scale production, has apparently been well justified. The greatly increased scale of operation on our commercial farms has not meant any significant tendency toward a general development of an industrial type of organization in agriculture. Estimated labor requirements per commercial farm for 1950 are only slightly above the 1930 level, averaging slightly more than 400 man days per farm. Estimates of annual average employment of hired labor per commercial farm varied from a little over .5 of a worker in 1930 and 1945 to a little less than .6 of a worker in 1940 and 1950.<sup>7</sup>

TABLE 2. INDEX OF ACREAGE, OUTPUT AND LABOR REQUIREMENTS PER COMMERCIAL FARM, 1930, 1940, 1945, AND 1950

Year	All Land <sup>1</sup>	Cropland Harvested <sup>1</sup>	Output <sup>2</sup>	Labor Required <sup>3</sup>
	Average per commercial farms 1945 = 100			
1930	71	81	53	95
1940	84	82	66	94
1945	100	100	100	100
1950 <sup>4</sup>	112	107	120	99

<sup>1</sup> U. S. Census of Agriculture, adjusted for estimated acreage on part-time, residential and nominal farms. Cropland harvested relates to the preceding year.

<sup>2</sup> Output on commercial farms estimated from BAE estimates of total farm output for these years, and the value of product distribution by economic class in 1945 and specified value of product limits in earlier years.

<sup>3</sup> Labor requirements on commercial farms estimated from BAE estimates of total farm-labor requirements adjusted for estimated labor requirements on part-time and residential farms.

<sup>4</sup> Preliminary. Land in commercial farms (including abnormal farms) estimated from total land and cropland 1950 and acreage distribution by economic class in 1945. Output estimated from total output 1950 and value of product distribution by economic class in 1945. Labor required estimated from total labor requirements for 1950, less estimated labor requirements on non-commercial farms.

<sup>7</sup> Estimated from BAE data on total annual average employment of hired labor adjusted for labor hired on part-time and residential farms.

*Changes in Numbers of Large-Scale Farms*

While there has been no substantial increase in the labor requirements on the average commercial farm, such data do not indicate whether or not the large-scale farms are becoming more numerous. The answer to this question depends on the standard of comparison.

Technological developments have resulted in an increase in the volume of business on large farms as well as commercial farms generally. Some increase in the number of large-scale farms has occurred even if an allowance is made for the general increase in output per acre. In 1950 there were approximately 116,000 farms of over 1,000 acres. The number in 1930 is estimated at about 80,000 (Table 3). This increase has stemmed largely from changes favorable to the operation of large-

TABLE 3. NUMBER OF LARGE-SCALE FARMS IN THE UNITED STATES  
ON TWO BASES, 1930, 1940, 1945, AND 1950

Year	Total Land of 1,000 Acres or More <sup>1</sup>	Value of Products Equivalent of \$25,000 or More Sales <sup>2</sup>
	<i>Thousands</i>	<i>Thousands</i>
1930	81	128
1940	101	119
1945	113	117
1950	116 <sup>3</sup>	106

<sup>1</sup> "Preliminary estimates," U. S. Bureau of Census, 1950 Census of Agriculture, Nov., 1951<sup>1</sup> and U. S. Bureau of Census, U. S. Census of Agriculture, 1945, General Report, Vol. II, Ch. II.

<sup>2</sup> 1949 price and production conditions. U. S. Census data on the number of farms by value of product groups were used in preparing these estimates. (See U. S. Census of Agriculture, 1945, General Report, Vol. II, Ch. X for numbers in 1930, 1940 and 1945. The indexes used in deflating value of product limits to make the estimates are shown in Table 1, Footnote 1.

<sup>3</sup> Preliminary.

scale, highly mechanized units, especially in some areas, and the improvements in the enumeration of range lands in the West. Mechanization enables a given number of men to handle larger acreages. In addition, in some types of farming, large-scale organizations have some advantages in marketing. The Pacific region, for example, had the highest percentage of farms classified as large-scale according to the 1945 economic classification of farms. Nearly one-half of the large-scale farms in this area are of the fruit and vegetable types.

The more pertinent question relates to whether there has been an increase in the number of large-scale farms if an allowance is made for the general increase in output per unit of labor required. Concern in regard to the trends in large-scale farming for the most part centers around the possible breakdown of the family farms. Growth in business volume because of increased productivity of labor is to be expected.

Actually, if allowance is made for the increased output per unit of labor, there appears to have been a small decline in the number of large farms from 1930 to 1950 (Table 3).

Reason for this decrease probably turns around the increased pressure put on management from the standpoint of supervision—the supervision of more complex and less routine operations over a wider area under mechanized agriculture. The logic of these changes is also closely tied to the fact that on large farms there is considerable opportunity for directly *substituting* capital for labor by getting rid of the hired labor. On the medium and commercial-family farms, increased mechanization has meant the *addition* of capital and land to the relatively fixed family resources. For a variety of reasons, many of the smaller commercial farms have not shared in this mechanization process and have not been able to proceed as far in increasing the acreages they operate.

Trends in numbers of those farms that require large amounts of hired labor for their operation apparently vary considerably among the different regions of the country. Available evidence indicates a long term downward trend in the number of large-scale units operated primarily by wage labor in the Corn Belt and Great Plains. An upward trend is indicated in the Pacific region. Production conditions in the Corn Belt and Plains areas perhaps discourage an increase in the size of farms much above that which can be handled by family labor. This is true even though a high degree of mechanization is possible. In the Corn Belt the diversified character of the farming increases problems of coordination. In much of the Great Plains, the weather and price risks are such as to discourage farmers from accentuating these risks by developing a form of organization which would be dependent on hired labor for continued production. In cotton farming, a significant decrease in large-scale tenant plantations is probably tied in with the increasing complexities of production operations as a result of mechanization and other technological developments. Supervision of large numbers of workers is more difficult, for example, when weeds are controlled by precision application of chemicals at specific stages of plant growth or at a particular speed of application than in the days when the operation was performed by hand hoeing.

Past trends seem to be in the direction of fewer large-scale farms if adjustments are made for the increased productivity per worker. However, there is no guarantee that past history will continue to repeat itself. Much depends on our future environment. Danger points can center around highly favorable relationships of farm prices to farm wages in a setting in which there is a presumption toward “fixed” farm prices.

*Production Efficiency in Large-Scale Farming*

The superiority of large-scale farms cannot be taken for granted. The comparative efficiency of large-scale farming is difficult to evaluate. We know that returns may vary with size of farm because of such things as:

- (1) Differences in physical efficiency of different kinds and sizes of machinery, equipment, and farm buildings.
- (2) Extent to which some key items in production, as machinery or buildings, require large quantities of land or labor for efficient operation.
- (3) Difficulties in large operations due to an increase in the requirements for supervision and coordination, as well as gains from the specialization of labor.
- (4) Marketing, financial, and research advantages of the larger units.

In respect to the difference in kinds and sizes of machinery and equipment on farms and their requirements, two points deserve emphasis. In the first place, gains from these sources continue over a wide range of size of units, but gains above a size which permits the use of a reasonably efficient combination often tend to become small. In the second place, there is considerable variation by geographic areas and types of farms in the size of farm at which a reasonably efficient combination with other production resources is possible.

Shifts from horse to tractor power, from binder to combines, and other shifts in technology, have been the most notable source of gains in physical efficiency. With few exceptions, principal machines are made in sizes that are suitable for use on commercial-family farms. In most areas, however, some further gains are possible through using larger sizes of machinery. Farmers and agricultural technicians often find that small tractors, combines, and other similar items of equipment, are less efficient than somewhat larger machines. On a large wheat farm, for example, two large tractors may be considerably more efficient than three smaller ones.

With respect to the corn-livestock farms of eastern Nebraska, Scoville concludes that:

"per acre investment in machinery and machine-operating costs decline with increasing size of farms. . . . Although the rate of decline in costs is high with small acreages, a full-sized family-operated farm is large enough to permit reasonably efficient utilization of equipment. Decreases in machinery costs per acre become relatively insignificant for farms that are larger than a two-man unit."<sup>a</sup>

The size of farm which permits reasonably efficient utilization of pro-

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<sup>a</sup> O. J. Scoville, "Relationship Between Size of Farm and Utilization of Machinery, Equipment and Labor on Nebraska Corn Livestock Farms," USDA Technical Bulletin No. 1037, p. 51.

ductive factors varies with the nature and size of the machinery and equipment needed in production. In some cases the size of a major machine or other item of productive equipment calls for relatively large inputs of other resources. For example, efficient utilization of the modern cotton picker in the Mississippi Delta would require perhaps 200 or more acres of cotton. Such a unit would employ several laborers or tenants. In other situations the units of machinery are small relative to common sizes of farms. Until recently, in many cotton areas, increasing the size of business commonly entailed simply using more mules, more half-row equipment, and more hoes.

In industry, and to some extent in agriculture, increased productivity often results from the expertness that comes from concentrating upon a limited number of processes. In many types of agriculture, however, this is soon counter-balanced by the difficulties of management and control. Difficulties of coordination vary materially with production conditions. But these relationships are difficult to measure quantitatively. For example, it is known, that the ease of planning and managing large operations is affected materially by such things as the extent to which operations can be standardized, the stability in farming practices, the yields and prices, and the acreages over which the supervision is spread. Management of large-scale operations, for instance, is perhaps somewhat easier in the cotton areas of California than in the general farming areas of the Midwest. On large-scale cotton farms in California, production practices do not need to be varied greatly from year to year and labor is concentrated on a smaller acreage. In the general-farming areas of the Midwest, acreage per unit of labor is much larger and the farm organization and practices often are more variable and complex.

#### *Numbers of Low Production "Commercial" Farms*

Recent United States history has disproved the Marxian dogma of the inevitability of large-scale organization of production in agriculture. But, several problems of importance are evident from these recent trends. Perhaps the problem of low production farms is of greatest importance. Agriculturists and economists frequently have underestimated the scope and magnitude of this problem in a setting of rapid technological advance.

Commonly taken for granted is the idea that with full employment the problems of farms with low production and meager incomes are rapidly disappearing and will, given a few more years, cure themselves without aid or help of any save the "invisible hand." It is true that the number of small "commercial" farms in terms of volume of production, or even constant acreage, has declined. However, increases in acreages handled



in areas where low production farms are concentrated have been surprisingly small even from 1945 to 1950.

In the case of small-scale farms,<sup>9</sup> as in the case of large-scale farms, the pertinent standard actually is not merely volume of production or farm acreage but the volume of production consistent with the increased production per worker. On the basis of product per worker, small-scale farms can be broadly characterized as "one-fourth man" farms.<sup>10</sup> The number of these small farms *increased* from 1930 to 1940 when allowance is made for the general changes in product per worker (Table 4). There

TABLE 4. NUMBER OF SMALL-SCALE COMMERCIAL FARMS IN THE UNITED STATES, 1930, 1940, 1945, AND 1950<sup>1</sup>

Year	Number of Farms	Per Cent of Commercial Farms
	<i>Thousands</i>	<i>Per Cent</i>
1930	798	15.1
1940	880	18.7
1945	785	18.8
1950 <sup>2</sup>	708	19.1

<sup>1</sup> Equivalent total of less than \$1,200 value of sales per farm in 1949. Value of products adjusted for changes in levels of prices and output per hour of labor. (See Table 1, Footnote 1.)

<sup>2</sup> U. S. Bureau of Census, 1950 Census of Agriculture.

has been some decrease in the 1940-50 decade, but even during this period the rate of decrease has been no greater than for all commercial farms.

Even, with the current rate of decline, it would take another half century to reduce their number below a quarter million farms. Certainly this is a modest enough goal. But for those who live on these farms it would seem to be a considerable length of time to wait on the free processes of competition.

While the process of technological development has served to increase the size and efficiency of commercial farms, generally the small-scale farms and to a lesser extent the small family farms, have been by-passed in the process of mechanization and technological advances.<sup>11</sup> Of course, in some cases, the relatively smaller increase in output on these farms

<sup>9</sup> For the purpose of this analysis small-scale commercial farms are defined as commercial farms having sales of less than \$1,200 in 1949. They are generally similar with respect to volume of farm output to the small-scale farms separated in the 1945 census.

<sup>10</sup> K. L. Bachman and R. W. Jones, "Sizes of Farms in the U.S.," USDA Technical Bulletin No. 1019, Table 2, p. 11.

<sup>11</sup> For further discussion see T. W. Schultz, "Reflections on Poverty in Agriculture," *This Journal*, January, 1950; S. E. Johnson, "Technological Progress and the Future of Rural Life," *This Journal*, May, 1950; K. L. Bachman, and R. W. Jones, op. cit., pp. 14-17.

may be associated with even smaller increases in inputs. It is assumed that this tendency is of secondary importance in these discussions. The relatively high level of operating inputs per unit of output currently found on these farms appears consistent with this assumption.

The scope of the problem of low productivity and underemployment of farm families is broader than that of small-scale farms. The productivity of farm families with a volume of business ranging from \$1,200 to \$2,500 is also extremely low. The product per worker on these farms averages less than half of the average for commercial farms. In addition there are a significant number of families on part time and residential units, especially in the rural areas, with low levels of productive employment.

One of the key problems facing us during the present period is how to get the most productive use of agricultural resources. The need for more efficient use of manpower and resources of agriculture also should be considered as a basic continuing problem in an expanding economy. In such a climate it provides the fundamental basis for increasing levels of living.

The record of mechanization and other technological developments on production efficiency on the whole has been notable during the last two decades. The rapid adoption of technological improvements in agriculture and increasing size of farms during the 1930-50 period has been associated with substantial increases in production efficiency. Output per unit of input has increased by more than one-fifth.<sup>13</sup> Despite the over-all gain in productivity, many of our farms, particularly the smaller ones, have made little progress.

Considerable numbers of these farms are found in all sections of the country, but they are more numerous in the "poor soil" areas where physical conditions have retarded improvements in farm production and alternative employment opportunities have been limited. There is a particularly large proportion of the total number of farms located in the Eastern Hilly and Piedmont Cotton areas, the Appalachian and Ozark mountain areas, the Southwestern sandy areas, and the Lake states.

In a broad theoretical framework, reasons for this differential rate of progress can perhaps be traced back to imperfections in mobility, in knowledge, and in divisibility of factors. Its more concrete contours are found in differences in the physical and economic environment, and the associated differences in such things as the availability of capital, production and the employment alternatives, levels of health and education, and attitudes toward change.

<sup>13</sup> "Farm Production Practices, Costs and Returns," Statistical Bulletin No. 83, U.S.D.A. and 1952 Agricultural Outlook Charts, U.S.D.A.



*Assistance in Adjustments*

The decrease in the absolute numbers of smaller-scale farms reflects some important trends which can and should be accentuated to effect desirable adjustments in the use of resources. These trends can be divided into two broad categories. (1) The general expansion of employment conditions, industrial dispersal, and developments encouraging increased commuting to non-farm jobs is broadening the horizons for utilization of labor in non-farm work. (2) Technological developments are significantly changing the agricultural horizon in many areas where low production farms are concentrated.

Programs to effectively encourage adjustments on the low production farms must be broadly conceived. In contrast to present extension and action programs aimed at increasing farm production on existing farms, successful programs relating to farm operators on low production farms must be concerned primarily with increasing the output per man, whether for farm or non-farm work. Many of the families on these smaller farms may find their best alternatives in industry rather than in agriculture. Necessary increases in the size of these farms to enable reasonable standards of manpower productivity will, indeed, mean that many families now in agriculture must shift to non-farm work.

The changes necessary to increase the productivity of low production farm operators are considerably different than those usually made in industry. Getting more production employment on the farm generally does not mean merely working more hours a day or changing to another job that will use talents more fully. The farmer not only is a worker but also a manager and a business man. Increased productive employment on the farm usually involves problems of management, size of farm, finance, and tenure. When migration to off-farm employment opportunities occurs, the changes in job are clear cut, but here a major change in occupation usually is involved.<sup>14</sup>

The importance of this problem among farm operator-families on low production farms has been emphasized by a recent staff report to the Joint Congressional Committee on the Economic Report entitled "Underemployment of Rural Families." On the basis of available evidence, this report estimates that full employment of workers on small-scale, small commercial, and part-time farms, at average rates of production, could add the equivalent of 1,600,000 workers to our total working force.<sup>15</sup>

No one solution fits all cases in the problem of getting more produc-

<sup>14</sup> See D. Gale Johnson, "Functioning of the Labor Market," *This Journal*, February, 1951, pp. 75-87 for an analysis of some of the limitations in the labor market in effecting desirable changes between agriculture and other industries.

<sup>15</sup> "Underemployment of Rural Families," material prepared for the Joint Committee on the Economic Report, Washington, 1951, p. 4.

tive employment on small farms. More intensive systems of farming may be the answer on some farms. A recent study indicates that during World War II a major share of the gains in production from intensification came on the small commercial-family farms.<sup>16</sup> Enlargement of the farm will be the best solution in many cases. Seasonal labor on other farms in the area, and on farms in other areas, may provide a means of increasing productive employment in some situations. Some farmers might do best by turning their place into a part-time farm or a residential unit and accepting regular off-farm employment either in the city or on other farms in the area. Others may find their best alternative is to quit farming and get a job in industry.

Recent technological developments have, in many situations, widened the opportunities for efficient *intensive* systems on relatively small acreages. Small-scale farmers whose best opportunities lie in agriculture should be encouraged to start the process of development and enlargement of their farms. Often substantial increases in production can be made by changes in farming systems and investment in capital improvements on their present farms.

But, a program of enlargement as well as development will be necessary in most cases. Production on small farms, even though increased in intensity, generally will not fully utilize available labor and modern equipment. Enlarging these farms would mean that other people now living on farms would move to the city.

Increasing the productivity of farm families on these small farms will often require complex changes in the system of farming, techniques of production, and size of farm rather than a simple substitution of capital for labor. To increase substantially the productivity on many small farms in the South, for example, would involve a shift toward a livestock system of farming, new kinds and varieties of feed crops, new fertilization and cropping practices, as well as mechanization of farm operations and an increase in the size of the farm.

The need for analyzing the process for getting technically feasible adjustments made, perhaps, is more important than the technical opportunities for adjustment. How can people with a high degree of capacity and efficiency for farming be identified and separated from those who do not possess these qualifications? How do the occupational requirements of non-farm alternatives and improved situations fit into the capacities of individuals who are now producing at low levels of efficiency? What are the characteristics of the people for whom it is presumed that adjustments should be encouraged? How can the process

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<sup>16</sup> J. V. McElveen, "Changes in Production During War II by Size of Farm," *Agricultural Economic Research*, Vol. III, No. 3, U.S.D.A., July, 1951, pp. 98-102.

of adjustments be stimulated? Perhaps all of these unanswered and partially answered questions indicate the need for production economists in the decade ahead to begin work with appropriate social scientists; to develop this field to a point where some of the needed answers can be provided—in much the same manner as production economists have worked with the physical technologists during the last 20 years.

### *Stability of Incomes*

Improvements in technology and increases in farm size not only raises problems of efficiency but also intensifies some problems relating to income stability. Changes in farming in recent decades have made farm incomes increasingly dependent on changes in economic conditions in the non-farm sector. Modern farms are increasingly dependent on machinery, motor fuel, fertilizer, and other non-farm goods to be used in further production.

The operator in today's setting is more affected by changes in prices and costs than was true 20 years ago. Although total inputs per unit of output have been decreasing, the *purchased* inputs used per unit of production have increased materially. The quantity of fertilizer, for example, has increased by more than three times since 1930. Fuel and farm power and machinery have nearly doubled. In terms of a constant dollar, the proportion of income going for purchased inputs and depreciation has increased by approximately one-fifth since 1930.<sup>17</sup>

In contrast, however, an increasing part of the purchased inputs are for maintenance and purchase of machinery and equipment. Part of these expenses may be deferrable for a period of years. More important, the severity of price movements in agriculture are being blunted by price support and production programs. Weather risks also are probably being reduced, not only by increased diversification in many areas, but also by modern technology providing more flexibility in meeting the deadlines of nature. Cultivation, plowing, or harvesting, for example, can be stepped up more where necessary by replacing horses with tractor power.

Perhaps the greatest potential danger of instability in income arises because of the increased capital requirements in modern farming that occur with increased sizes of farms and increases in machinery and other types of capital required. Investments averaging above \$30,000 per farm commonly are required for operation of the medium and larger commercial

<sup>17</sup> Calculated from BAE data on volume of production for sale, and home use and production expenses and index of prices paid for goods and services used in production. See BAE publications on "Farm Income Situation," July-September, 1951 and "Farm Cost Situation," March, 1951. In this connection see James Vermeer, "Trends in Farm Size and Organization" *This Journal*, Proceedings Issue, November, 1951, p. 890.

farms in the United States. This represents more than a lifetime of saving for the average individual. A reasonable degree of stability for the less advantaged young farmer seeking to establish efficient and up-to-date farms may call for substantial revisions in tenure and credit practices.

### *Summary*

Technological developments in agriculture have been associated with a rapid growth in acreage and output of commercial farms. This has occurred largely by adding land and capital to a relatively fixed labor supply, made up largely of the labor resources of the farm operator and his family. In the main stream of American agriculture, which centers around the production of staple crops, neither the Marxian doctrine nor the fears of certain groups in the United States with respect to the effects of mechanization on the family farm seems to be borne out by recent trends or analysis of these trends.

Important problems do exist. The concentration of large scale operations in some types of farming should not be overlooked. More important, however, is the need for strengthening of the family farm, both in assisting many farm operator families to make the difficult adjustments needed to meet the challenge inherent in the general progress in technology in agriculture and in providing equal opportunities for progress without over burdensome risks.

## SOCIAL SCIENTISTS AND AGRICULTURAL POLICY

WALTER W. WILCOX

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### *Introduction and Summary*

**T**HIS paper is an attempt to trace and appraise the impact of social scientists<sup>1</sup> on agricultural policy. Every craftsman from time to time makes evaluations of the extent to which his craft is making worthwhile contributions to the larger human world.

The social scientist is a relatively new craftsman, and agricultural policy as it is known today is a relatively new development. Both have entered the national picture within the last 30 or 40 years. Already one detects a note of frustration when social scientists dealing with agricultural problems get together. They profess to see little evidence that the results of their researches and analyses are being incorporated into existing agricultural policies.

Actually, through their description, analysis, and measurement of economic and social relationships, social scientists have played a key role in the formulation of agricultural policy throughout the full lifetime of their craft. "Radical intellectuals" have not played as large a role in originating innovations in economic legislation for agriculture as in the field of labor, yet professional intellectuals have originated most of the basic ideas around which political groups have later polarized themselves.

Both politicians and leaders of economic interest groups in agriculture, as in other sectors of our economy, depend on social scientists for the basic information out of which they develop action programs. Most social scientists are engaged in the description of existing situations and in making analyses of alternative means of achieving some preferred situation. Yet some of the more decisive influences have been studies of the economic implications of achieving generally accepted goals. Thus, social scientists' evaluation of the economic implications of stabilized farm prices in relation to a parity formula has been fully as important as their large contribution to the development of the parity formula and the price stabilization measures.

Economic interest groups are actively seeking quantitative measures to express their economic status relative to other economic phenomena. As compared with the usual emphasis on "problem solving" activities in agricultural economics seminars, the function of developing and improving statistical measures adapted to the needs of particular segments of the agri-

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<sup>1</sup> In using the term social scientist in this paper, the author has in mind primarily agricultural economists, rural sociologists, statisticians, general economists, and political scientists.



cultural economy should receive a higher professional rating than it gets.

In spite of much current opinion to the contrary, agricultural policy now more fully utilizes the relevant researches and measurements of social scientists than in any earlier period in our history. Social scientists are now employed by most organized groups concerned with agriculture and allied industries. Equally important, an increasing number of our farm leaders, members of Congress and members of the state Legislatures have had basic training in the social sciences.

Agricultural policy continues to fall short of its goal of maximizing the welfare of both farm people and the economy as a whole for several reasons. Social scientists' contributions continue to be limited too largely to static economic analyses with implied assumptions of economic equilibrium as the starting point. They have failed to develop dynamic analyses based on an understanding of the structure of the agricultural economy. Agricultural policy problems are dynamic in their nature. Social action is undertaken oftentimes because society does not want to wait for the forces of economic equilibrium to work themselves out. Economic analyses specifically based on these dynamic situations are usually lacking.

A second reason is that farm leaders, members of Congress, and farm people are not fully acquainted with what is already known by the social scientists, hence at times act in ignorance of existing information. And to an important extent, minority groups have exploited their narrower interests at the expense of the general welfare in some of our agricultural policies. These minority groups exploit their economic interest by political alliances with other minority groups or by taking advantage of the ignorance and indifference of the general public.

### *Early Contributions*

It is convenient to start our review by calling attention to the Commission on Country Life appointed by Theodore Roosevelt in 1908. Although no professional social scientists were included among the seven members appointed to this commission, at least four had professional standing in the field of agriculture and conservation. They were: Chairman L. H. Bailey, Dean of the College of Agriculture, Cornell University; K. L. Butterfield, President of Massachusetts State College; Gifford Pinchot, United States Forest Service; and Henry Wallace, editor of *Wallace's Farmer*.

The report of this commission, made to the President in 1909, is one of the early landmarks of growing concern regarding the social and economic problems of farm people. Following this report and a study of cooperative land mortgage credit in Germany, the Federal Farm Loan Act was passed in 1916. This act, providing for uniformly low interest rates on farm mortgage credit throughout the United States, gave farmers

credit facilities more nearly equal to those available to urban businessmen. The primary goal of this federally-sponsored cooperative credit system was assistance to farmers in achieving farm ownership.

Social scientists contributed to the formulation and passage of the Federal Farm Loan Act but they played an even larger role in the development of the McNary-Haugen proposals for farm relief in the 1920's. The McNary-Haugen movement was primarily an activity of farm leaders and politicians attempting to redress the prevailing unfavorable economic situation for farmers compared to other economic groups.

The critical information used in building up popular support for the McNary-Haugen bills came from the social scientists, in spite of the fact that most agricultural economists were either frankly skeptical or actively opposed to the McNary-Haugen proposals.<sup>2</sup>

Chester C. Davis, one of the early leaders in the movement, reports:

"The line-up of forces on farm relief from 1923 to 1926 was discouraging from the point of view of those who favored aggressive action, to restore farm prices to equality with costs. The Cooperative Marketing Associations . . . were unconvinced that, given federal recognition and support, they could not do the job themselves. The South as a whole was indifferent, partly because its chief farm organizations were the cotton, tobacco, and rice cooperatives. . . . Even when prominent industrialists recognized the importance to national prosperity of restored farm buying power, they were violently critical of any specific method proposed to that end.

*"Agricultural colleges and economists were as a whole indifferent to the problem. During the early years their leadership was negative and their attitudes scoffing."*<sup>3</sup> (Author's italics.)

This attitude of indifference or skepticism on the part of trained economists, based in part on their inability to suggest a simple solution, was not a decisive factor.<sup>4</sup> The greatest influence was brought to bear by

<sup>2</sup> See for example: Eric Englund, "Fallacies of a Plan to Fix Prices of Farm Products by Government Control of the Exportable Surplus," *This Journal*, April, 1923. Most articles dealing with the agricultural situation published in the professional journals from 1921 to 1928 either ignored the McNary-Haugen proposals or were critical of them. A notable exception is the article by John D. Black, "The McNary-Haugen Movement," *American Economic Review*, September, 1928.

<sup>3</sup> Chester C. Davis, "The Development of Agricultural Policy Since the End of the World War," *Yearbook of Agriculture*, U.S. Department of Agriculture, 1940, p. 304.

<sup>4</sup> ". . . the cynicism of social scientists toward change and reform has greatly lessened. You describe this slightly but it is something real that has happened. Not only economists but sociologists have worked out and patented classroom theories, whether classicists or not, without adequate knowledge of the fact that the very phenomena with which they deal and attempt to explain are created by the behavior of the common people. They have been cynical of the lack of understanding of the common people, so cynical in fact that they have refused to recognize any validity at all on the part of the ideas of the common people. Maybe a more moderate statement is to say that they have insisted on a degree of perfection of understanding on the part of the common people which simply isn't in the cards."—Carl C. Taylor in a letter to the author.



their assembly of data on prices; their time series analyses of relative price changes; their assembly of data on farmers' debts, interest payments and the cost of goods purchased by farmers; and their time series analyses of changes in the prices of products bought by farmers relative to prices received for products sold. Given these basic data and the results of studies made by economists regarding the advantages of tariff protection to the nonfarm sectors of the economy, farm leaders had the raw materials with which to diagnose their economic situation and formulate a remedy.

Clearly the McNary-Haugen proposals for dealing with agricultural surpluses won general support because they had more merit than other proposals. A plan advanced by Senator Norris of Nebraska would have created a government corporation to provide storage and processing facilities and would have authorized the government to process farm products. Its purpose was to reduce marketing and processing charges on farm products, thereby increasing prices to farmers.

Charles L. Stewart of the University of Illinois developed an export subsidy plan which was supported by the National Grange. The Farmers' Union and a number of farm leaders and members of Congress proposed legislation for fixing prices on the basis of cost of production. In addition to the above three proposals, individuals and small groups advanced many other plans designed to improve the farmers' economic welfare.

Without the continuing analysis of these many proposals by social scientists, the public would have had little basis for evaluating them. One of their major functions is critical analysis and evaluation of proposals in terms of more or less generally accepted social and economic goals. During this period of agitation for "farm relief" measures, social scientists' analyses resulted in a general acceptance of the McNary-Haugen proposals as the "least undesirable" of the measures currently proposed.<sup>5</sup> This in itself was an important contribution. It probably kept us from adopting legislation to fix prices on the basis of cost of production.

A few agricultural economists played a more positive role in developing farm relief proposals during the 1920's, however. The first McNary-Haugen Bill was drafted in the United States Department of Agriculture in 1923 with the support of Secretary Wallace. Back of this was the analysis of the chief of his Bureau of Agricultural Economics, Henry C. Taylor, and that of other agricultural economists such as O. C. Stine.<sup>6</sup>

<sup>5</sup> John M. Brewster points out that the practical man usually acts on the "least worst alternative" while the scientist is skeptical, indifferent or opposed to action which falls short of fulfilling the requirements of his perfect model.

<sup>6</sup> Davis, *op. cit.*, reports, "The influence of the Department of Agriculture in giving direction to the gathering farm-relief movement became clearly evident in the autumn of 1923." He then cites Henry C. Taylor's trip to the Northwest followed by the

Although the popular agitation for farm relief measures was carried on by such publicists as Johnson and Peek and by such organizations as the American Farm Bureau Federation, economists in the Department of Agriculture played a vital role in working out the details necessary in formulating specific legislative proposals.

### *The Period of the 1930's*

Continued interest in, and agitation for, farm relief measures led to the publication of two committee reports on the subject in 1927. Both of these committees, one sponsored by the Association of Land-Grant Colleges and the other sponsored jointly by the National Industrial Conference Board and the United States Chamber of Commerce, had economists among their membership and employed economists to assist them in preparing their reports.

In addition to these two important committee reports covering all economic problems of agriculture, studies of the elasticity of demand and supply of farm products added greatly to our knowledge of the functioning of the agricultural economy in the late 1920's.

In his book, *Agricultural Reform*, published in 1929, John D. Black first described the existing situation and then indicated the probable effect of adopting alternative measures in the light of the available research findings up to that time. Chapter 10 of this book, entitled "The Domestic Allotment Plan," reviews the proposals which had been advanced by W. S. Spillman and others for "Balancing Farm Output" and includes the author's suggestions for a workable plan for "paying producers a free-trade price plus the tariff duty for the part of their crop which is consumed in the United States and this price without the tariff duty for the part of it that is exported."<sup>1</sup>

These advantages were to be obtained "by a system of allotments to individual producers of rights to sell the domestic part of the crop in the domestic market."

It is difficult to credit the origin of the ideas which led to the passage of the Agricultural Marketing Act of 1929. This act authorized the establishment of a Federal Farm Board and a Stabilization Corporation with a revolving fund of \$500,000,000. It seems probable that the general plan was advanced by cooperative leaders. It was a counterproposal put forward by those who objected to raising artificially the domestic price level of farm products above world prices. The Farm Board and stabilization

organization of the wheat growers, publication of a report to the President on the wheat situation in 1923, and Secretary Wallace's endorsement of the plan to segregate and dispose of surpluses through a government export corporation.

<sup>1</sup> John D. Black, *Agricultural Reform*, McGraw-Hill Book Company, New York, 1929, p. 271.

idea was endorsed in principle in the report of the committee of the U. S. Chamber of Commerce mentioned earlier and had the support of economic advisers to the Secretary of Commerce, Herbert Hoover.

Guidance in administering these stabilization operations was furnished by studies of the elasticity of demand and of gains to be realized from storing annual crop surpluses made by Bean, Ezekiel and other economists. The Agricultural Marketing Act of 1929, however, has no closely identified social scientist ancestry.<sup>8</sup>

Operations of the Federal Farm Board provided additional data and experience for analysis by social scientists. The Farm Board's experience and the economic collapse beginning in 1930 led to a general agreement that additional government programs were needed in agriculture, as well as in other parts of the economy.

The social scientists' contributions to the farm legislation and administration of farm programs in the early 1930's was great indeed. The basic domestic allotment plan described by John D. Black, greatly modified in the process of adoption, became the central program under the Agricultural Adjustment Act passed in 1933. Expansion of governmental farm credit activities was based directly on studies and recommendations by specialists in the field of credit, money, and banking. Legislation authorizing other economic programs for agriculture, such as the purchase and retirement of submarginal lands and rehabilitation of rural families on public relief programs, were the direct outgrowth of studies made by social scientists in these fields. Thus, we find the Bankhead-Jones Farm Tenant Act in 1937 was the direct result of the report of the President's Committee on Farm Tenancy which was transmitted to Congress in February, 1937. In preparing the report, they drew on earlier land tenure studies and summarized the recommendations for remedial action which had been proposed. President Roosevelt, in transmitting it to Congress, said, "The facts presented in this report reveal a grave problem of great magnitude and complexity."<sup>9</sup>

The food stamp plan of supplemental food distribution in the late 1930's and the School Lunch Program, which is still in operation, grew directly out of studies of social scientists and nutrition specialists.

In the period of sharp economic distress beginning in 1930 and lasting until defense mobilization rescued economic activity from the doldrums in 1941, social scientists were given a hearing without parallel in our national economic life. The Democratic administration, individual mem-

<sup>8</sup> J. S. Davis of Stanford University specifically recommended this type of legislation—See *This Journal*, January, 1928, p. 26-27.

<sup>9</sup> Paul V. Maris, *This Land Is Mine*, U.S. Department of Agriculture, Monograph 8, 1950, p. 2.

bers of Congress, and administrators of the new legislation all actively sought the advice and counsel of social scientists in attempts to improve the functioning of the farm sector of the economy. Research findings of agricultural economists and rural sociologists were reviewed over and over again to find suggestions for guidance in formulating and administering the new programs adopted during this period.

### *The Parity Formula*

It is of particular note that the parity concept, so widely endorsed by farm and other political groups today and so widely criticized by social scientists, was developed out of materials and ideas supplied by the social scientists.

Agricultural economists in the U.S. Department of Agriculture computed the price indexes which indicated that prices of farm products fell more sharply than industrial prices after World War I and failed to regain their prewar relationship in the early 1920's. They went even further and collected information on the prices paid by farmers for goods used in production and for home consumption. Farm leaders searching for facts with which to document their observations regarding their current unfavorable situation, utilized these price series effectively. By the end of the 1920's, there was general acceptance of these price indexes and a popular interpretation of the difference between them (using 1910-14 as a base) as a measure of the extent of the disparity of farm prices and incomes.

This parity principle had reached such general acceptance by 1933 that the goal of the Agricultural Adjustment Act was defined as the achievement of "prices to farmers at a level that will give agricultural commodities a purchasing power with respect to articles farmers buy, equivalent to the purchasing power of commodities in the base period," which was designated as August, 1909, to July, 1914, except for tobacco. The act set forth the methods to be used in computing these indexes.

As experience was gained in administering the act and groups of producers found more favorable base periods for their products, the formula was modified by Congressional action. Thus in 1935, current interest and tax payments were added to the formula. The period 1919-1929 or some similar postwar base period was adopted for an increasing number of commodities.

The weakness in attempting to tie price-support and acreage adjustment programs directly to prices computed by the parity formula became evident after a few years of administrative experience. When parity prices were used as standards in setting price ceilings during the war period, their limitations were still further magnified.

The parity goal, in its rigid statistical interpretation—in essence the re-establishment of individual price relationships which had prevailed several decades earlier—is indefensible from an economic point of view. The primary role of prices in a free market economy is to guide production. Parity prices tied to some past base period are not good guides to production. Largely because of this, social scientists conclude that the parity price goal for individual farm commodities should be discarded by farm groups. Yet the political and administrative usefulness of such a price standard so greatly outweighs its disadvantages that parity prices continue to be the guidepost for administrative action.

A few agricultural economists and statisticians most intimately connected with the computation and use of the formula made exhaustive studies of alternative methods of computing parity prices. Out of this effort came a general acceptance of a major formula revision in 1948 which minimized a number of shortcomings.

The conclusion, if one is to be drawn from this experience with the parity formula, is that, as stated in the opening paragraphs, economic interest groups must have quantitative measures to express their economic status relative to other economic phenomena. Such measures have an important political value to these groups. They also perform a vital function for administrators of these programs which is not fully appreciated by most social scientists. The social scientists' most useful function in this area is that of developing and improving statistical measures adapted to the uses made of them. Social scientists also make important contributions in their analyses of the limitations of statistical measurements of economic relationships. Lay leaders of special interest groups all too frequently misuse the statistical series available to them.

#### *Weaknesses of Social Scientists in Prewar Years*

Agricultural policy in the prewar years utilized and was based on all information made available by the social scientists. Despite the large amount of educational work and the years of development in the social sciences in relation to agriculture, it is amazing how little was known about the functioning of the agricultural economy. All too often, programs and administrative procedures were undertaken in the 1930's with only a few of the relevant facts and relationships known and fully appreciated. The new programs and administrative procedures themselves provided a large amount of new information for analysis. *The existence of operating programs, however, with their publicly announced goals and procedures often-times determined the analyses undertaken by the social scientists and perhaps even influenced the conclusions reported.* Unfortunately, an operating program acquires vested interests in analyses indicating the



need for the program and the appropriateness of current administrative procedures. It also has a short-run and mistaken interest in avoiding studies and the publication of results critical of either the program's objectives or procedures.

Many of the weaknesses of specific programs in the 1930's were the result of inadequate basic data when they were undertaken and inadequate or not sufficiently objective analyses of the operating experience of the program. It was a trial and error period in economic management of an economy that had symptoms of deep-seated and long continuing maladjustments. In the agricultural sector, the conditions to which the remedial programs were addressed were even more deep-seated and chronic. Agriculture's basic troubles began in the 1920's. They merely became more serious in the 1930's. Yet social scientists had not worked out a dynamic framework into which could be fitted the specific maladjustments in agriculture—and hence appropriate remedial measures.

The record of accomplishment of the 1930's is a spotty one. Failing to achieve a high level of employment in the economy as a whole, government programs for agriculture continued to be on an emergency basis as the decade ended. The basic price support legislation adopted in 1938, the marketing agreement, and the soil conservation legislation all appear to be permanent parts of our agricultural policy. But we had not yet diagnosed the long run social and economic problems of agriculture in dynamic terms and our agricultural policy was a series of rescue programs rather than integrated action making substantial progress.<sup>10</sup>

### *The Decade of the 1940's*

The 1940's gave us more the 10 additional years of experience. It was a decade of full employment and high demands for both farm products and for rural workers. Social scientists, reviewing the experience of the 1930's on the basis of fuller information and in this new environmental setting, were able to throw new light on both the true nature of past maladjustments and the effectiveness of measures used to correct them.

In this period of high level business activity, the relative importance of the different problems changed sharply. The over-all disparity between farm and nonfarm prices and incomes disappeared. Yet the basic problem of instability of farm prices and incomes had only been partially solved. Poverty in agriculture, which had existed for decades, assumed increasing importance in relation to other problems. Marketing problems which had largely been shunted aside in the previous decade were given added attention.

<sup>10</sup> See for example: John B. Canning, "Rescue Programs and Managed Agricultural Progress," *This Journal*, May, 1942, pp. 496-511.

The shift from wartime conditions back to a peacetime economy and the expiration of emergency wartime price support legislation in 1948 led to a systematic consideration of both the economic outlook for agriculture and of the appropriate farm policies in the postwar years.

From the mid-1940's up to the present time, professional literature on agricultural policy has taken on a new character as compared with prewar years. Our knowledge of the functioning of the economy has been increased tremendously. Furthermore, the economy as a whole has achieved a high level of business activity and, for the first time since 1930, literature on agricultural policy in a fully-employed economy has relevance. Advances in both general economic analysis and statistical inference have been incorporated into the writings on agricultural policy in recent years.

Agricultural economists have been added to the staffs of the special interest groups, the trade associations, the legislative committees, and the administrative agencies. Each interest group within agriculture is continually reviewing statistical indexes, administrative decisions, and legislative proposals in the light of their special interests and also of the general welfare.

Perhaps the most important development, however, is the number of younger men with substantial training in the social sciences who are moving into leadership positions in local, state, and national farm organizations. Similar developments are occurring in the field of politics. We now have well-trained social scientists in Congress and in many state legislatures.

### *The Challenge to Social Scientists Today*

Agricultural policy falls short of its goal of maximizing both the welfare of farm people and of the whole economy to an important degree because social scientists have not yet accurately diagnosed the dynamic nature of specific policy problems. Too much attention has been given to the price and production relationships under static equilibrium conditions at the expense of neglecting analysis of the more deep-seated dynamic problems of unequal growth and development in the agricultural economy.<sup>11</sup>

In a fully-employed economy, agriculture continues to operate in a position of disequilibrium, utilizing outmoded technology, too much labor, and too little capital. The large scale inefficiency of farm operation of inadequate farming units has had little attention in relation to the price and

<sup>11</sup> Carl C. Taylor comments at this point, "We still cling not only to static analysis but we refuse to make historical analyses if quantitative data are not available with which to do so. . . . We do not even make some quantitative analyses which I think would help us to understand some great historic trends."



production problems of the commercial farmers. Yet, we have not developed comprehensive analyses of the problems of reducing price and income instability in commercial agriculture.

Current deficiencies in agricultural policy also result from the success of special interest groups in achieving their narrower objectives at the expense of the larger general welfare. This is a normal part of social action. From the welfare point of view, however, it is important to note that many of the special interest programs are the direct result of the public's ignorance or indifference. Education in the social sciences in the colleges and universities and in adult education programs is now doing a great deal in this area. It can do a great deal more.

As we begin the 1950's, the role of the social scientists in formulating and executing agricultural policy is greater than at any earlier time in history. Social scientists affect agricultural policy at four major levels: (1) in the training of future agricultural and other public leaders; (2) in raising the level of economic intelligence through adult education; (3) in the staff work for organized groups concerned with agriculture and allied industries; and (4) in the analysis of contemporary policy problems and the critical evaluation of alternative lines of action for the guidance of legislative groups and administrative agencies.

As more is known and understood about the functioning of the agricultural economy and the interrelationships between agriculture and other parts of the economy, policy measures become more complicated both in their legislative formulation and in their administration. A heavy responsibility rests on the social scientists to provide the trained personnel to fill the staff positions with highly competent individuals. Of equal importance is the need for research and education on the dynamic aspects of policy problems and for additional objective analyses of the effect of specific programs or lines of action.

## AMERICAN AGRICULTURAL POLICY DURING REARMAMENT\*

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**T**O SIZE up the major strategy of our complex national policy for assisting and guiding our dynamic agriculture as it is today, and to review with constructive criticism its unsettled contradictions and controversial philosophy, is an undertaking of appalling proportions. Yet the vexing aspects of the historical span to be considered—the duration of rearmament—require prior clarification.

The United States is still a nation of extraordinary youth, virility, growth, and expansive enterprise. It is far from a stage of "mature" or stagnant capitalism, political retirement between two oceans, or from approaching early culmination of population growth and decline. The Senate and House Joint Committee on the Economic Report has repeatedly emphasized that the "nation faces a long period—perhaps a decade or more—of high-defense expenditures and international tensions,"<sup>1</sup> and expects a peak of total budget expenditures of 87 billion dollars in the fiscal year 1953, a decline to 84 billion dollars in 1954, and 72 billion dollars in 1955, and a leveling off at about 60 billion dollars in 1956.

There is some doubt that mere expenditures for armaments will establish the sought-for relative military strength. World War II has led to the new venture of public investment in basic science research on a large scale, and chemistry, physics, and engineering have opened new vistas of profound changes in the economic evaluation of resources. Rearmament investment in research and invention is revolutionizing the technology of weapons and accelerating the obsolescence of weapons. Therefore, one may assume a much longer period than four to five years of heavy outlay for armaments, if international friction and Soviet arms production continue and no state of war comes.

But two other courses are equally possible. The second would be a gradual or sudden dispersion of friction and a peaceful settlement. Perhaps when we hit the peak of our defense budget, Soviet leaders will find it more convenient to come to terms with the West. Whether this came suddenly or slowly, it would lead to curtailment of arms production.

The third alternative would be more aggression, unfolding World War III. Though as possible as sudden peace, the author's opinion, held since

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<sup>1</sup> 82nd Congress, First Session, Senate Report No. 644, *Inflation Still a Danger*, p. 27.

1945, is that in spite of serious and continued tensions, the open precipitation of World War III by the Soviets is improbable. For our discussion, moreover, the second alternative—the “outbreak” of peace—would raise the greatest number of potentially tricky economic problems.

From this I conclude: First, in view of the strong probability that the period of rearmament will require a much longer pull than two or three years before we shall be “over the hump,” agricultural policy during rearmament must be shaped for the longer run, not merely for a brief emergency. Second, if rearmament lasts between five and 10 years, the continual friction also would call for a larger scope of economic effort than is now contemplated, and agricultural policy must provide for adjustment to it. Third, since a genuine diplomatic peace offensive by the Communist bloc may result in a drastic change in the world’s economic situation, agricultural policy must be ready to cope with potential sudden change.

### *Agriculture’s Role in An Arming Society*

What, then, should our nation expect of its agriculture during rearmament? In case of war, what may our friends among the nations and allies expect from agriculture, and by what policies should the expectations be realized?

The experience of two world wars has rendered obsolete any idea of meeting the requirements of a modern nation in total war principally by stockpiling war materials, munitions, or food. Another world war may last longer than either preceding one—despite atomic weapons. World War II was won chiefly because we could outproduce the enemy with such overwhelming industrial and agricultural output that we could break his staying power. Its chief economic effect was the expansion of our industrial capacity by at least one-third. One of our problems now is how to keep our agricultural resources abreast of this new expansion.

These resources must be so developed as to provide, during a long rearmament phase without war, or in another long world war, the proteins, carbohydrates, and fats; the fruits and vegetables; and the cotton and other fibers needed for our armed forces and civilians. These resources also must serve as supplements to the potential needs of allied soldiers and civilians.

Such a goal is, in the nature of what has to be achieved, identical with the long-run need for economic growth. It differs from long-range objective chiefly in its accelerated pace, but possibly also in a certain deviation in the direction of expansion. Adjustments needed in the long run must be made earlier.

During the last few decades, a breath-taking technological evolution has been opening new frontiers in agriculture, and the progress has been

most spectacular in the United States and Canada. Not only did it assist greatly in winning World War II, but it also kept millions of people in Europe and Asia alive after the war, while providing us at home with a better diet and lifting a large proportion of our farmers to a new level of income.

The replacement of animal draft power by machines, and the development of scores of modern power-driven implements, have multiplied by leaps and bounds the efficiency of human labor on a substantial number of farms.<sup>2</sup>

The value of farm machinery and motor vehicles increased from 3.1 billion dollars in 1940 to 15.5 billion dollars in 1951, and the physical machine inventory increased by 138 per cent. This phenomenal rate of mechanization, attained during and after the war, solved the problem of getting farmers an income comparable to that of people in other fields—at least those farmers who procured more and better equipment. Gross farm income rose from 11 billion dollars in prewar years to 38 billion dollars in 1951, while net income from farming increased during the same period from five to 18 billion dollars. The increases are striking even if one allows for depreciation of the dollar.

The farm labor force shrank from 9.6 million in 1939 to 7.5 million in 1950 (monthly average), while the output of farm products in 1951 was 46 per cent above the prewar (1935-39) average, with only four per cent more acres planted to crops.

Yet we still have an economic reserve in agriculture. Roughly three million farms, or more than one-half of what the census enumerated as "farms," are efficient production units, supplying about 95 per cent of the marketed products. Of the remaining 2.8 million "farms," two-thirds are the homes of part-time farmers and other non-commercial borderline farm people, while the other third or roughly 800,000 small farms are operated by people who are under-equipped and under-employed on too little land. Not by our agricultural policy which acted as a deterrent to that adjustment, but by the opportunities created by industrial development in rural areas, did we make great strides in improving this situation during the war and afterwards, particularly in the Deep South. Yet a long period of further adjustment in utilizing human, natural, and capital resources lies ahead. The transfer of a part of the farm population by its free choice and initiative to other more productive jobs requires a great deal of economic leeway, and the forced expansion of our industrial and com-

<sup>2</sup> The elimination of seven million horses and mules in the last 10 years has freed some 20 million acres of land for food use. This land-use reserve is now almost exhausted. From 1941 to 1950 the number of tractors increased from 1.7 million to 3.8 million, the number of trucks from 1.1 million to 2.2 million, and the number of combines from 225,000 to 650,000.

mercial economy under the impact of defense spending provides this leeway. Its utilization for the defense effort calls for two processes: migration from farm to factory, and adjustments in size and equipment of the farms these people leave, as well as development of the managerial abilities of the farmers remaining. This adjustment will increase the productivity of the people transferred to other jobs. To agricultural production it will add a changed output at lower cost but not necessarily increase the proportion of this group in national farm output.

National defense production policies must assist in every possible way the transfer of more manpower from under-equipped and too small farm units to other occupations, while agricultural policy must provide for the improvement of the remaining farms.

Farm wages have risen from an index of 124 prewar (1910-14 = 100) to one of 432 in 1950, or about as much as industrial wages (from 199 to 521), while the index of prices paid by farmers, plus interest, taxes, and wages, rose from 125 to only 255. This differential provides a powerful incentive toward more mechanization and other improvements in the efficiency of agricultural labor by owner-operators of farms.

In the national security program, agriculture must be assured allocations of steel sufficient to provide an ample supply of spare parts and new farm machinery. Agriculture must not drift into a long postponement of replacements and additions to its machine and motor-vehicle inventory on the theory that the rearmament program needs the materials instead. Farm machinery and farm vehicles must be given priority over passenger cars and other consumer durables.

The other vital need in developing the capacity of our agricultural plant to produce concerns chemical supplies.

The expansion of agricultural production over the last 10 years has been almost entirely accomplished by increasing yields per acre rather than by expanding the area under cultivation. In 1951, yields were 31 per cent higher than in 1935-39, as the joint result of a shift to higher yielding crops; better varieties; the use of improved seed; and better cultural, protective, and feeding practices for plants and animals.<sup>3</sup>

#### *The Importance of Nitrogen to Increased Production*

But the most outstanding factor has been the wider use of fertilizer and more effective fungicides and pesticides. It has been estimated that

<sup>3</sup>Wheat yields from 1869 through 1938 were either 13 or 14 bushels per acre average per decade, but in 1939-48 the average was 17 bushels. Corn yields from 1869 through 1928 were either 26 or 27 bushels per acre average per decade, and from 1929 to 1938 fell to 23 bushels; but in 1939-48 the average was 33 bushels. In 1949 it was 39 bushels, and in 1950 it was 38 bushels.—U.S. Department of Agriculture, *Fluctuation in Crops and Weather, 1869-1948*, Statistical Bulletin No. 101, Washington, D.C., June, 1951.



one-fourth of our entire crop production may be attributed to the use of fertilizer. In 1950, farmers spent 744 million dollars on fertilizer, and with it earned three billion dollars additional income, or \$4.13 for every dollar spent on fertilizer. In varying combinations with other nutrients, nitrogen, the key element of the life-bearing proteins in plant and animal cells, is one of the paramount and most effective means of increasing crop yields per acre. One pound of it produces about 20 additional pounds of corn per acre. Nitrogen has become the powerful lever for lifting yields, as it had been earlier in Western Europe's agriculture. In 1940, American farmers used only 1.8 million tons of nutrients in commercial fertilizers, in contrast to five million tons in 1950 (1.3 million tons N, two million tons  $P_2O_5$ , and 1.4 million tons  $K_2O$ ). In relation to all other commodities used for farm production, prices of synthetic nitrogen, closely tied to prices of coke and natural gas, have come down. On September 15, 1951, the price index of fertilizer stood at 153 compared with 275 for all commodities used in farm production.

Low prices make the use of much more nitrogen highly profitable, and due to the lag in the expansion of the industry, there is a substantial unsatisfied demand for nitrogen. The Department of Agriculture estimates the current deficit to be 500,000 tons a year, and that 100,000 tons more are needed every year in addition.

Private industry is eager to invest in expanded plant capacity in regard to nitrogen, and all that is required is the granting of necessary priorities for steel and other materials. This demand for scarce defense materials is unfortunate as to timing. But in the event of war, munitions manufacturers would at once lay claim to a substantial part of the nitrogen capacity, thus depriving agriculture of a strategic raw material. The longer rearmament lasts, the more urgent will be the need to expand nitrogen's production capacity.

The additional 500,000 tons of nitrogen, equivalent to about 10 million tons of corn, would increase our feed supplies to help satisfy the demand for animal products at lower prices. The availability of more nitrogen also would permit a much more efficient utilization of our soil resources in areas of abundant rainfall and those with existing irrigation water. Since natural rain costs less than irrigation water, areas east of the 98th Meridian derive the greatest benefit from low-priced nitrogen, particularly on the soils along the Appalachian slope and in the old plantation cotton belt. (In 1950 the South Atlantic and South Central states used 57 per cent of the fertilizer consumed by the nation, and the East North Central states consumed 18 per cent.) During rearmament, no federal funds should be invested in any new irrigation projects, and no materials should be allocated for them, except where defense plants require them.

But nitrogen also helps to cut the costs of production per unit of irrigated land. Low-priced nitrogen can ideally be used to produce more nutritious grass for dairy and meat cattle on the southern soils transferred from crop use to grazing, and thereby help adjust farming in the still overpopulated farm regions.

The worldwide shortage of sulphur and the consequent shortage of superphosphates is less typically an agricultural problem. This is because sulphuric acid is one of the chemical industry's key raw materials, and this bottleneck needs to be broken in any case. It seems extremely doubtful that international allocations with price ceilings for superphosphates are the proper means of developing new sources of sulphur or sulphuric acid. A high price is still the most effective incentive in the search for, and exploitation of, mineral deposits. American agriculture could easily stand a temporary rise in superphosphate prices if these prices result in making an abundance of superphosphates available; and eventually increase in supply would bring the prices down. It may be that foreign economies cannot get along without sulphur allocations. The point should be stressed, however, that it is more vital to overcome the shortage than to make it bearable by rationing.

In the same way, chemical products to fight fungus and bacteria diseases and plant and animal insect pests must be secured.

#### *Changes in Production, Prices, and Consumption*

All these prerequisites for expanding the capacity of our agricultural plant are necessary even without rearmament, although not at the same pace. Our population growth requires it. The Bureau of Agricultural Economics assumes 157 million people by 1952, and 190 million by 1975. The pace at which our agricultural production expands must at least match the population-growth rate. Any dietary improvements resulting from increased industrialization, improved productivity of labor, and improved consumer purchasing power will require additional expansion of production. A decline in exports of farm products would create some greater leeway for domestic consumption.

From 1940 through 1950, the country's agricultural production increased about three per cent a year, whereas during the three preceding decades the annual growth was only one per cent. This expansion was achieved under the stimulus of urgent effective demand and high market prices. The situation was made still more ideal for the farmer by elimination of price risk, through high support prices for the oil crops, i.e., peanuts, soybeans, and linseed. With an insatiable market demand, high output and highly satisfactory prices made farming extraordinarily profitable. With the exception of oilseeds and cotton, most of the crops and live-

stock products were either unsupported or sold above support prices. Some were even under price controls.

The increased output of individual commodities varied according to changes in demand. While the output of the foodgrains and feedgrains, truck crops and vegetables, and tobacco increased 30 to 40 per cent above prewar, oil crops increased by 250 per cent or more. Fruits and tree nuts rose only 15 to 20 per cent. Cotton was cut below the prewar output, increasing to 10 per cent above prewar only in 1948, and to 20 per cent above in 1949. The great changes in oilseeds were accomplished with the aid of price differentials between commodities established with forward price floors which were cut loose from parity. The output of meat animals and livestock products expanded from 1938 to 1943 by almost 40 per cent with the aid of enlarged feedgrain production, the feeding of large grain reserves, and the doubled supply of protein concentrates available in the form of oilcake. This output of animal products responded chiefly to the command of the feed-livestock or the feed-animal products price ratios.

Out of this changed production, the apparent per capita civilian consumption amounted to the following quantities in pounds per year:<sup>4</sup>

Commodity Group	1935-39 Average	1951	1951 in Per Cent of 1935-39
Fats.....	45	43	97
Carbohydrate foods <sup>a</sup> .....	338	306	90
Vegetables.....	265	296	112
Fruits.....	164	163	100
Red and white meat, fish, eggs, and cheese..	201	248	123

<sup>a</sup> Potatoes and sweet potatoes reduced to grain equivalent. Dry beans, peas, and nuts excluded.

In other words, in 1951 we have been consuming per capita 10 per cent less of the main starchy and sugar commodities, three per cent less visible fats, 12 per cent more vegetables, and 23 per cent more animal-protein food<sup>5</sup> than we did in prewar years, and the same amount of fruit. It is noteworthy that our parity policy has given price support exactly to the commodity group which shows the greatest decline in per capita consumption. The change in animal-protein consumption strikingly demonstrates the improvement in the nutritional level during the last decade of economic expansion.

This means that during the last decade we have shifted our whole

<sup>4</sup> Primary distribution weights. *The National Food Situation*, U. S. Department of Agriculture, July-September, 1951, p. 4.

<sup>5</sup> Excluding fluid milk, cream, canned milk, and evaporated milk.

utilization of food resources even further toward the conversion of vegetable matter into animal protein and fats. In 1950-51, we fed nearly 165 million short tons of grain and other concentrates, 120 million short tons of hay, plus the grazed-off fodder on the ranges to our livestock herd of 144 million animal units. Our total food use of grains amounted only to 12 million tons. Thus, in using 165 million tons of grain, we have fed about 13 times as much grain to animals as we ourselves ate in various forms. The grain fed to animals would be sufficient to provide about 450 million people with all the carbohydrates in a diet like that of the Russian people today.

When we convert grain into animal products we lose between seventy and ninety per cent of its caloric energy. Consequently our national diet, in a war emergency, can be adjusted to a considerable degree. In fact, this reserve is so large that, whenever the need arises through drought or other adversity, we can reduce the number of grain-consuming animals and thereby set free those calories for human food. This adjustment was applied in many countries in Europe during the war, and it staved off not only famine but serious deterioration of health as well. During rearmament, however, our emphasis should be on expanding feedgrain production to keep step with the growing market for livestock products.

#### *The Dominant Role of the Livestock Industry*

The most remarkable feature of the long-term development of American agriculture is this increasingly dominant position of the livestock economy. In 1950, over 57 per cent of the cash receipts of our farmers was from livestock and animal products, and the substantial additional proportion of cash receipts came from feed materials. American agriculture today is a huge livestock business with breadgrain, cotton, tobacco, fruit, and vegetable production attached to it. This is highly important for the administration and implementation of the nation's agricultural policy.

Production goals for agriculture during the period of economic expansion and for the national security drive are fairly clear. If we are to keep livestock production geared to the expanding demand for animal protein, we shall have to expand grain production to fill the feed trough properly, and in order to avoid scraping the bottom of the bins at the end of each grain year.

The production of vegetable fats ought to be high chiefly to meet the requirements of livestock for protein concentrates, a commodity in short supply in the world market. However, if in the event of war the tropical sources of palm fats should suddenly dry up again, we could within one year expand domestic oilseed production to almost any degree

desired. Moreover, in that event, we also can reduce industrial-fats consumption and switch more to detergents. Fruits pose no special preparedness problem, and our capacity to produce vegetables is so flexible that we can produce what is needed at any time and on a relatively small acreage.

Our grain crops fluctuate with changes in yields under the impact of weather, pests, and diseases or because acreages, after having been sown, turn out to have been too large or too small. We must realize that we have balanced these fluctuations partly by expanding the carryover of wheat and feedgrains to as much as 43 million tons, or by contracting the carryover to as little as 5 million tons, and by adjusting our foreign trade in grain. But we also achieve balance by drastically changing the number of chickens and hogs raised, and by adjusting cattle rations—feeding up to 45 million tons of corn equivalent more or less per year.

We balance these changes in grain supplies partly by eating more or less red and white meat, and eggs. The maintenance of this flexibility in consumption is an important element of our agricultural economy. In view of the fact that a war emergency, and perhaps the contingency of drought in wartime, might call for the adjustment of livestock numbers (meaning adjustments in meat consumption), it is important to maintain during war periods the leeway for the operation of this mechanism. It may not be necessary to create special grain reserves. Immediate adjustments in utilization in case of war seem to offer enough latitude.

### *The Machinery for Guiding Farm Production*

But this raises the question of the mechanism by which farm production ought to be guided during the rearmament period. Ever since the depth of the depression, we have had a system of putting supports under the prices of certain basic commodities according to the parity formula, in an attempt to guarantee producers of commodities a certain minimum purchasing-power return. Several times this formula has been revised, but in essence it is still the convenient political tool by which the Congress grants farmers security against a sudden price collapse, and a bonus in the absence of such calamity.

The means for keeping prices above support levels vary for different commodities. It ranges from open-market purchases by the Commodity Credit Corporation, and commodity non-recourse loans to farmers at specific percentages of parity, to outright subsidies in connection with marketing quotas. Only during the war did we ever temporarily emancipate any support prices from the ties to parity, and then only for the oil crops.

The philosophy behind this policy is most involved. The original idea



was to grant the farmer security against a disastrous shrinkage of income owing to conditions over which he had no control or that were beyond his ability to adjust to—namely the great industrial depression. Admixed to such thought was the strong notion that soil-conserving practices are a non-paying proposition and must be subsidized. Also admixed was the erroneous idea that by pegging prices, one could lift the income of all farmers sufficiently to get the “underprivileged” farm population, i.e., those with uneconomic units, out of the hole.

Gradually the stop-disaster feature has retreated into the background, and parity has become the automatical tool to keep the terms of trade between agriculture and the other segments of the economy favorable to agriculture at all times—even when an extraordinary domestic and foreign demand provides farmers with a high agricultural income. Parity price supports are also supposed to be a part of the machinery of production. But it is recognized that this guidance takes place only with reference to specific crops, and only when boosted production is desired. But other connotations are also involved—among them the idea that agriculture cannot live under the rule of “chaotic free market prices” and requires orderly, controlled prices; and the idea that agriculture needs bargaining power in an economy in which wages are decided by collective bargaining and many industrial prices are set under restrained competition.

From the pragmatic point of view, one might be tempted to say that the production record, as well as the record of technological and social change and of income over the past 12 years, prove that agricultural policy cannot have been seriously wrong. Or, if wrong, then its deterrent effect was not strong enough to prevent farmers from performing well for the nation and for themselves.

It is this writer's view that the high domestic and foreign demand during the last 12 years gave agriculture such an enormous economic uplift that it dwarfed the effect of an agricultural policy which was and still is basically focused on a potential situation of disastrously low demand. This policy has never had to stand the test of such a situation.

Yet with those who take a more favorable view of the effect of the policy one could argue that distortions were caused by the use of a historical base period that predates World War I. Competent critics feel that the parity policy delayed many necessary adjustments in production, and involved expense for the nation in terms of public funds, administrative personnel, and lost national income. Agricultural economists have been fairly articulate in their critical analysis of the economic defects of the parity policy.

Today, however, a larger question must be raised, in a much broader

frame. Our agricultural policy is now involved in the broad economic issues of western political democracy. It evolved in response to the great depression of the 1930's in connection with full-employment policies to be achieved with various degrees of public administrative controls of the economy. In almost all countries, the market economy is being administratively coerced and subjected to political controls. Economic pressure groups, through parliamentary processes, exert powerful pressure upon government administrations. All these pressures ultimately express themselves in inflationary policies. In fact, this phenomenon is so much taken for granted by so many citizens that they accept it almost as indisputably as the force of gravitation. The majority are interested chiefly in the rate, hoping that it will be slow enough to leave them at least half of the purchasing power of their savings in 20 years' time.

The Twentieth Century Fund's Committee on Economic Stabilization (J. M. Clark, T. W. Schultz, Arthur Smithies, and D. H. Wallace) recently stated that "even a moderate inflation if continued long can wipe out a large part of fixed incomes, and of insurance, annuities, and all other forms of saving; and create social and political tension serious enough to be a real threat to a democracy."<sup>6</sup> Yet, democracy has even gone to the point of recommending through international agencies such inflationary policies.<sup>7</sup>

### *The Corroding Effects of Inflation*

The ominous fact is that inflation, even if held down to the pace now so widely accepted, is one of the most corroding forces in a society. Nothing did more to destroy the foundations of the German society and to prepare it for the Nazi revolution than did the inflation of 1919-23. Policies which silently incorporate or condone inflation are a crime against the ethics of a free society and a private economy.<sup>8</sup>

In the United States, as in many other countries of the West, we have gradually drifted into an economy which is sailing before the wind of full-employment policies at almost any price, and our agricultural policy is an integral part in this dangerous drift. It is here that this writer's criticism begins. Clandestinely, or more recently even in major-industry contracts, we have tied wages to the cost-of-living index instead of to the productivity of labor. Industrial prices are inevitably adjusted to wages. Agricultural prices, at the same time, are tied by the parity formula

<sup>6</sup> Twentieth Century Fund, *Report: Financing Defense*, August, 1951.

<sup>7</sup> Cf. Jacob Viner, "Full Employment at Whatever Cost," *Quarterly Journal of Economics*, August, 1950, pp. 385-407.

<sup>8</sup> Cf. the lucid analysis of our drift toward inflation by L. Albert Hahn, "Prophezeite Inflation" in *Zeitschrift für das Gesamte Kreditwesen*, Frankfurt, October 15, 1951.

to the price index of products that farmers buy. Hence, we have an automatic escalator system which increases inflationary pressures, while full-employment policies prevent its operation in the opposite direction. It is all very well for the Farm Bureau Federation, the National Council of Farmer Co-operatives, and the National Grange to take a stand against inflation, subsidies, and restrictions of production for price maintenance, but so long as they do not emancipate themselves from the parity principle, they are not taking the effective step against inflation, and have not deflected our agricultural policy from governmental interference and restrictions.

The parity policy is still motivated by fear of a collapse of consumer demand, although for 12 years we have had a situation approaching and sometimes exceeding full employment. For the duration of rearmament, it is almost impossible by definition to have a collapse of consumer demand. Our decentralized private agricultural economy, with its three million efficient entrepreneurs, is today far more commercialized than before. And, owing to the high cash expenses, this economy is bound to adjust itself more quickly and thoroughly to changes in demand and prices. It needs no such props as parity supports in times of high employment when consumer power and preference create prices favorable for the high output of farm produce.

By tampering with the price mechanism and the market, the parity policy is putting brakes on prompt and effective adjustments to expressed consumer preferences at a time when all the prerequisites for such adjustments are ideally present. While the 1949 Agricultural Act replaced the historical base periods with a sliding scale referring to the most recent ten-year period—a correction which led to a lower parity for the grains and a higher one for livestock and livestock products—parity prices are still far out of step with the American consumer, who expresses his preference in a dollars-and-cents bid in the market. On October 15, 1951, the average prices farmers received for cotton, tobacco, beef cattle, veal calves, and lambs were above effective parity prices. The prices obtained for hogs, eggs, and milk were fairly close to parity. But the prices of most other products were substantially below parity.

We must next consider the complexity of the maximum-production provisions of the parity policy that grew out of the Defense Production Act of 1950. Aside from empowering the government to allocate, fix priorities, procure, and requisition, this act permits the government to set maximum prices for materials and services, and to "stabilize" prices and wages. Yet in the case of agricultural commodities, it stipulates that price ceilings may be set no lower than the higher of two prices: (1) the parity price or (2) the highest price received during the period May 24 to June

desired. Moreover, in that event, we also can reduce industrial-fats consumption and switch more to detergents. Fruits pose no special preparedness problem, and our capacity to produce vegetables is so flexible that we can produce what is needed at any time and on a relatively small acreage.

Our grain crops fluctuate with changes in yields under the impact of weather, pests, and diseases or because acreages, after having been sown, turn out to have been too large or too small. We must realize that we have balanced these fluctuations partly by expanding the carryover of wheat and feedgrains to as much as 43 million tons, or by contracting the carryover to as little as 5 million tons, and by adjusting our foreign trade in grain. But we also achieve balance by drastically changing the number of chickens and hogs raised, and by adjusting cattle rations—feeding up to 45 million tons of corn equivalent more or less per year.

We balance these changes in grain supplies partly by eating more or less red and white meat, and eggs. The maintenance of this flexibility in consumption is an important element of our agricultural economy. In view of the fact that a war emergency, and perhaps the contingency of drought in wartime, might call for the adjustment of livestock numbers (meaning adjustments in meat consumption), it is important to maintain during war periods the leeway for the operation of this mechanism. It may not be necessary to create special grain reserves. Immediate adjustments in utilization in case of war seem to offer enough latitude.

### *The Machinery for Guiding Farm Production*

But this raises the question of the mechanism by which farm production ought to be guided during the rearmament period. Ever since the depth of the depression, we have had a system of putting supports under the prices of certain basic commodities according to the parity formula, in an attempt to guarantee producers of commodities a certain minimum purchasing-power return. Several times this formula has been revised, but in essence it is still the convenient political tool by which the Congress grants farmers security against a sudden price collapse, and a bonus in the absence of such calamity.

The means for keeping prices above support levels vary for different commodities. It ranges from open-market purchases by the Commodity Credit Corporation, and commodity non-recourse loans to farmers at specific percentages of parity, to outright subsidies in connection with marketing quotas. Only during the war did we ever temporarily emancipate any support prices from the ties to parity, and then only for the oil crops.

The philosophy behind this policy is most involved. The original idea

was to grant the farmer security against a disastrous shrinkage of income owing to conditions over which he had no control or that were beyond his ability to adjust to—namely the great industrial depression. Admixed to such thought was the strong notion that soil-conserving practices are a non-paying proposition and must be subsidized. Also admixed was the erroneous idea that by pegging prices, one could lift the income of all farmers sufficiently to get the “underprivileged” farm population, i.e., those with uneconomic units, out of the hole.

Gradually the stop-disaster feature has retreated into the background, and parity has become the automatical tool to keep the terms of trade between agriculture and the other segments of the economy favorable to agriculture at all times—even when an extraordinary domestic and foreign demand provides farmers with a high agricultural income. Parity price supports are also supposed to be a part of the machinery of production. But it is recognized that this guidance takes place only with reference to specific crops, and only when boosted production is desired. But other connotations are also involved—among them the idea that agriculture cannot live under the rule of “chaotic free market prices” and requires orderly, controlled prices; and the idea that agriculture needs bargaining power in an economy in which wages are decided by collective bargaining and many industrial prices are set under restrained competition.

From the pragmatic point of view, one might be tempted to say that the production record, as well as the record of technological and social change and of income over the past 12 years, prove that agricultural policy cannot have been seriously wrong. Or, if wrong, then its deterrent effect was not strong enough to prevent farmers from performing well for the nation and for themselves.

It is this writer's view that the high domestic and foreign demand during the last 12 years gave agriculture such an enormous economic uplift that it dwarfed the effect of an agricultural policy which was and still is basically focused on a potential situation of disastrously low demand. This policy has never had to stand the test of such a situation.

Yet with those who take a more favorable view of the effect of the policy one could argue that distortions were caused by the use of a historical base period that predates World War I. Competent critics feel that the parity policy delayed many necessary adjustments in production, and involved expense for the nation in terms of public funds, administrative personnel, and lost national income. Agricultural economists have been fairly articulate in their critical analysis of the economic defects of the parity policy.

Today, however, a larger question must be raised, in a much broader



frame. Our agricultural policy is now involved in the broad economic issues of western political democracy. It evolved in response to the great depression of the 1930's in connection with full-employment policies to be achieved with various degrees of public administrative controls of the economy. In almost all countries, the market economy is being administratively coerced and subjected to political controls. Economic pressure groups, through parliamentary processes, exert powerful pressure upon government administrations. All these pressures ultimately express themselves in inflationary policies. In fact, this phenomenon is so much taken for granted by so many citizens that they accept it almost as indisputably as the force of gravitation. The majority are interested chiefly in the rate, hoping that it will be slow enough to leave them at least half of the purchasing power of their savings in 20 years' time.

The Twentieth Century Fund's Committee on Economic Stabilization (J. M. Clark, T. W. Schultz, Arthur Smithies, and D. H. Wallace) recently stated that "even a moderate inflation if continued long can wipe out a large part of fixed incomes, and of insurance, annuities, and all other forms of saving; and create social and political tension serious enough to be a real threat to a democracy."<sup>6</sup> Yet, democracy has even gone to the point of recommending through international agencies such inflationary policies.<sup>7</sup>

### *The Corroding Effects of Inflation*

The ominous fact is that inflation, even if held down to the pace now so widely accepted, is one of the most corroding forces in a society. Nothing did more to destroy the foundations of the German society and to prepare it for the Nazi revolution than did the inflation of 1919-23. Policies which silently incorporate or condone inflation are a crime against the ethics of a free society and a private economy.<sup>8</sup>

In the United States, as in many other countries of the West, we have gradually drifted into an economy which is sailing before the wind of full-employment policies at almost any price, and our agricultural policy is an integral part in this dangerous drift. It is here that this writer's criticism begins. Clandestinely, or more recently even in major-industry contracts, we have tied wages to the cost-of-living index instead of to the productivity of labor. Industrial prices are inevitably adjusted to wages. Agricultural prices, at the same time, are tied by the parity formula

<sup>6</sup> Twentieth Century Fund, *Report: Financing Defense*, August, 1951.

<sup>7</sup> Cf. Jacob Viner, "Full Employment at Whatever Cost," *Quarterly Journal of Economics*, August, 1950, pp. 385-407.

<sup>8</sup> Cf. the lucid analysis of our drift toward inflation by L. Albert Hahn, "Prophezeite Inflation" in *Zeitschrift für das Gesamte Kreditwesen*, Frankfurt, October 15, 1951.

to the price index of products that farmers buy. Hence, we have an automatic escalator system which increases inflationary pressures, while full-employment policies prevent its operation in the opposite direction. It is all very well for the Farm Bureau Federation, the National Council of Farmer Co-operatives, and the National Grange to take a stand against inflation, subsidies, and restrictions of production for price maintenance, but so long as they do not emancipate themselves from the parity principle, they are not taking the effective step against inflation, and have not deflected our agricultural policy from governmental interference and restrictions.

The parity policy is still motivated by fear of a collapse of consumer demand, although for 12 years we have had a situation approaching and sometimes exceeding full employment. For the duration of rearmament, it is almost impossible by definition to have a collapse of consumer demand. Our decentralized private agricultural economy, with its three million efficient entrepreneurs, is today far more commercialized than before. And, owing to the high cash expenses, this economy is bound to adjust itself more quickly and thoroughly to changes in demand and prices. It needs no such props as parity supports in times of high employment when consumer power and preference create prices favorable for the high output of farm produce.

By tampering with the price mechanism and the market, the parity policy is putting brakes on prompt and effective adjustments to expressed consumer preferences at a time when all the prerequisites for such adjustments are ideally present. While the 1949 Agricultural Act replaced the historical base periods with a sliding scale referring to the most recent ten-year period—a correction which led to a lower parity for the grains and a higher one for livestock and livestock products—parity prices are still far out of step with the American consumer, who expresses his preference in a dollars-and-cents bid in the market. On October 15, 1951, the average prices farmers received for cotton, tobacco, beef cattle, veal calves, and lambs were above effective parity prices. The prices obtained for hogs, eggs, and milk were fairly close to parity. But the prices of most other products were substantially below parity.

We must next consider the complexity of the maximum-production provisions of the parity policy that grew out of the Defense Production Act of 1950. Aside from empowering the government to allocate, fix priorities, procure, and requisition, this act permits the government to set maximum prices for materials and services, and to "stabilize" prices and wages. Yet in the case of agricultural commodities, it stipulates that price ceilings may be set no lower than the higher of two prices: (1) the parity price or (2) the highest price received during the period May 24 to June

24, 1950. These minimum ceilings are determined by the Secretary of Agriculture.

When ceilings were established in January, 1951, the average level of farm prices was 110 per cent of parity. In pursuit of the "hold-the-line" policy of the Office of Price Stabilization, a 10 per cent rollback, effective in June, was announced on cattle prices in April. By that time, cattle prices had reached 152 per cent of parity. Slaughter quotas and additional rollbacks were contemplated but not permitted by new legislation. Retail beef prices were under ceilings, and wholesale and retail pork prices were also under ceilings. But the prices which packers paid for hogs were left free.

This attempt of the OPS to fix maximum prices on cattle, beef, and pork interferes with a current economic adjustment in agricultural policy in the rearmament period. No matter how convenient it may seem as a political expedient or how convincing as an attempt to convey the impression that the government is fighting inflation and protecting consumers, this meat-price control scheme appears to be an exceedingly ill-advised, ineffective, and an ominous use of the powers granted under the Defense Production Act.

It is ineffective because the whole experience of the United States, to say nothing of countries which have exercised total control of prices, has convincingly demonstrated that effective price control requires control of the volume of supply or the volume of effective demand, or both. In this present case, the government has no such control. If the government wanted to make price control effective, it would have to seize the cattle in quantity or to ration beef. Both are impracticable. Without such measures, all the scheme does is to disorganize the meat-distribution system of this country by making the functioning of the regular trade channels more difficult, by creating opportunities for a black market, by promoting the deterioration of quality standards, and by making the most popular cuts disappear from meat counters—and it is doing all of these things now.

The American people are amply supplied with animal proteins including meat at prices which, in the aggregate, are not out of line with incomes. To make the preferred cuts of beef less expensive than is warranted by the high-pitched demand and the short supply seems absurd, because all it does is to stimulate the demand further, and to interfere with the flow of cattle from ranches and farms to the markets. If one wants to avoid rationing by prices, one must institute effective consumer rationing in its place. But rationing during the rearmament period is out of the question, because there is no need for it, and because the people will not put up with it except in a war emergency. It is taken for granted that in case of war rationing must be introduced immediately, but it would

constitute a great disservice to the defense effort if this important reserve measure were used during rearmament.

We are the best equipped nation in the world to render meat controls ineffective in peacetime. With 11,600 locker plants being used 90 per cent for meat storage by four million patrons, and probably many times that number of home freezers, and with a substantial and flexible amount of livestock being slaughtered without federal inspection, the enforcement of regulations is extremely difficult. The attempts of the OPS to enforce its scheme will increasingly misallocate labor, partly by the additional work and regulations required in the trade, and partly because of the enforcement personnel required.

The shortage of preferred cuts of beef can be overcome only by expanding the beef-cow herd and saving more heifer calves. This farmers are doing. The total cattle herd increased by six million head in 1949 and 1950, and again by six million head in 1951. By January 1, 1952, we shall have an all-time record cattle herd of 90 million head.

Beef prices will come down in due time through expanded slaughter, provided there is no public interference with that process. Prices can rapidly expand the supply of poultry meat, eggs, and pork, and under freely moving prices, consumers will adjust their demand accordingly. In 1951, we are eating 35 pounds of chickens and turkeys per capita, in contrast to 20 pounds in prewar years, 74 pounds of pork instead of 56, and 51 pounds of eggs in contrast to 37 in prewar times. Egg prices in 1950 were supported by the government. In 1951, because of the relative scarcity of beef and lamb, the price of eggs rose 50 per cent despite a much larger supply.

Inflationary pressures concerning food and fiber prices cannot be effectively diminished by keeping prices under ceilings without doing serious harm to the agricultural side of the defense effort. These pressures must be reduced by expanding production and by instituting effective measures in the monetary realm which will render harmless the excess consumer purchasing power, such as pay-as-you-go taxes and the curtailment of consumer credit. The idea of lowering food prices for consumers by paying subsidies to farmers or to consumers has been rejected by the three largest farm organizations, and rightly so. These procedures merely conceal the inflationary pressure they generate via raising the federal budget still further.

### *Conclusions*

During rearmament and its high level of industrial employment, agricultural policy should desist from price controls and price supports and return to a free market for farm products, with freely moving prices.

We should stop promptly the so-called agricultural conservation-payment program. Our national policies concerning agriculture should be designed to increase the adaptability and economic efficiency of our free-enterprise farm system, to scrap policies which by the application of political formulae create rigidities, and to utilize the historical opportunity of the present strong support of our farmers for a return to the free market.

When millions of able entrepreneurs have regained the self-confidence to operate without the social harness of bureaucratic guidance and universal risk insurance, it is an event that may amount to a decisive victory in the free, anti-collective world. But to make it a victory, the policy of perpetual fear of a total depression must be changed. If we should engage in any public stockpiling of agricultural commodities for a war emergency, we should be guided exclusively by a commodity-reserve strategy, and not simply accumulate stocks as the backwash of price supports.

One question, however, still remains: What ought to be done in the event of a sudden collapse of farm prices owing to a drastic decline in foreign and domestic demand? This question could be dismissed as being outside the realm of this paper because it would imply a sudden cessation of rearmament. But since it occupies the minds of all who deal with agricultural policy, an attempt should be made to answer it.

If, by the time such a situation arises, our agricultural policy is not changed, we will be found assisting agriculture with worn-out methods that have failed to achieve their ends in the past. We will be using methods which are economically and socially unsound, and which are the opposite of what is desired by those of our farmers on whose performance the nation must rely in war or peace. Our parity policy is aimed at that very situation today, with production and marketing quotas for basic commodities for which price support is mandatory, and with the machinery of market intervention, stockpiling, and loans.

For the last 12 years, during the war and postwar boom, our parity policy has in the main been operating under the favorable climate of maximum production and expanding demand, and has never had to meet the test of a sharp price decline of major proportions. The sort of output- and market-supply restricting monopoly policy was pursued by one Republican and two Democratic administrations, and did not work then. Modern agriculture, much better equipped, will either defeat it more effectively than before, or the administration will have to adopt methods which involve a shift to a centrally administered, regimented agricultural economy with real rationing of means of production. If attempts of this nature should be introduced, we would find ourselves in the process of abandoning the greatest asset we have in our three million commercial farms—the decentralized, self-adjusting, freely experimenting individual



enterprises which have outproduced every other type of farm in the world. We would be forced to centralize their management, thereby subjecting this vital sphere of our dynamic economy to political control and to resulting inflexibility, waste, and decreased output. This is the joker in the parity price policy.

This whole approach is basically wrong. High income must be the result of high performance which adapts itself continually to the needs of the nation. To reverse the process by fixing income by political agreement and adjusting production accordingly is at best a clumsy and costly detour. As Allan Kline, the president of the American Farm Bureau Federation, has so aptly put it, "We can outproduce the Soviets, but it's doubtful that we can out-control them."<sup>9</sup> It is equivalent to sedition to wean the entrepreneurs in so essential a part of our economic system from risk-taking by a policy that attempts to socialize the losses and to individualize gains. This is a dangerous and false philosophy.

The chief axiom of agricultural policy should be that the main leverage be applied outside agriculture—that is, in industry and commerce. Policies which create conditions favorable to a high level of employment in the non-agricultural parts of the economy create the sort of situation in which agriculture can prosper.

The cushioning of a sudden and continuous slide of farm prices while the prices of farmers' purchases fail to decline can, to some extent, be accomplished by cautious operations in the Commodity Credit Corporation. In defense of this vast public corporation with which the government continually interferes in our agricultural commodity markets, it is often said that its operations have cost very little. From October, 1933, to April, 1951, a period of over 17 years, the price-support operations of the CCC have involved the relatively small net realized loss of 913 million dollars. One-half of this loss has been incurred in the support of potato prices, and one-third in the support of egg prices.

In 1951, the CCC reduced its formerly large stocks of cotton and wool to zero, and its stocks of feedgrain to 15 million tons, and of wheat to 200 million bushels—thus reducing its investment from 2.3 billion dollars to 1.45 billion dollars. However, twice in its history the CCC has been relieved of highly embarrassing accumulations of stocks, both times by war. Both times it had the best chance of cracking up on the same rocks on which the Farm Board floundered. It should be a deliberate policy to reduce CCC holdings during periods of high farm income to as low a level as possible in order to have available the potential capacity for periods in which short-term price-support operations are needed.

<sup>9</sup> Allan B. Kline, "Farm Bureau's Stand on Inflation," *Farm Policy Forum*, August, 1951, p. 12.

By those who consider our parity machinery as one of the great achievements of what they call social justice and security in the modern society, the charge will be made that it is inconsistent for this author to propose we keep the CCC alive. This is correct, but one can defend the existence of a public corporation of this sort as a stand-by auxiliary for various emergencies. The crucial point is what one does with such an organization. If its main purpose is not to emancipate prices from the market level but to even out shocks and to grant farmers the necessary time for making adjustments, supporting such an institution is not necessarily in contradiction to the general argument of this article.

Beyond this, agricultural policy, in the event of radical change in demand and prolonged serious price decline, should concentrate on the low-income non-commercial farmers by aiding them in adjustment of farming or in a shift to other occupations. The ill-fated report which the Bureau of Agricultural Economics wrote in 1945 on a conversion program for the Cotton South was a constructive piece of work. Otherwise, this author would still be inclined to favor a form of stop-disaster aid for the three million commercial farmers which would temporarily supplement their income with outright deficiency payments on a few basic commodities without interfering with market prices.

With liquid assets of 20 billion dollars in bank deposits and savings bonds, and a total equity of 130 billion dollars, America's farmers are in a position totally different from the one when they had to face the great depression. With a cash income from marketing three times as large as it was in the 1920's, they have a real-estate debt only half as large as they had then. The main agricultural fear of "deflation" has its roots correctly in the contractual rigidity of mortgage debts and their increasing burden. When cash income was 10 billion dollars and debts were also 10 billion dollars, it actually did cause disaster when cash returns fell to 4.5 billion dollars. But when cash returns are 30 billion dollars and mortgage debts are less than six billion dollars, prices can fall a great deal before the mortgage debt will begin to create a serious problem, particularly when farmers have 20 billion dollars in liquid assets at hand.

During the 1920's, a far larger proportion of our agricultural income was derived from exports. Even with 1951 physical exports two-thirds higher than prewar, their value amounts to only nine per cent of the gross agricultural income.

This paper has not dealt with the international aspects of our agricultural policy, chiefly for lack of time, but also because there seems no reason for fearing that during the period of rearmament the world market will change drastically enough to cause a major upset in our farm prices.

The whole issue of our agricultural policy is not whether we do or do

not give public assistance and guidance to our farmers, but how to do so most effectively with due respect for their best interests, properly interpreted. We and other Western nations are arming in the defense of freedom. Our policies must not mislead us into losing at home what is being threatened from abroad. Never before in the last 20 years have we had a better opportunity to change the course of our agricultural policy than we have now. Now we should act.

### DISCUSSION

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There is little in Professor Brandt's excellent paper with which to disagree, except some matters of detail. These remarks, therefore, will be confined largely to supplementing his analysis, while shifting the emphasis somewhat here and there.

Professor Brandt is undoubtedly correct in arguing that present "agricultural policy . . . was and still is basically focused on a potential situation of disastrously low demand." However, to avoid misinterpretation, he might have given greater emphasis to the fact that, during the last decade, the actual prices of most major farm products have been above statutory support levels. This fact should be stressed because—despite the notoriety given the price-support activities in potatoes, eggs and butter—price supports cannot be fairly blamed for the high consumer prices of most foods and fibers in recent years. Instead, under the forced draft of World War II and our subsequent rearmament period, the prices of most agricultural products have been free, permitting them to serve the function of allocating resources within agriculture relatively well. Furthermore, Professor Brandt also should have emphasized the closeness of prices of several major products, notably wheat and corn, to current support levels. Without the government's dangerously drastic curtailment of the acreage of the 1950 cotton crop, cotton currently might be in the same position.

#### *Need Long-Range Agricultural Planning*

Such facts underline the narrow limit for downward price adjustments in certain farm products, should present boom conditions slacken even moderately. While the present situation is highly volatile, I agree that a sustained national defense effort probably will maintain farm prices at relatively high levels for the next several years, at least. Sooner or later, however, certain farm prices will undoubtedly decline considerably. When they do, existing price-support legislation will quickly prove to be unsound. If Congress continues to follow a policy of drift during the present agricultural prosperity, an easing of inflationary pressures will quickly saddle us again with rapidly mounting storage stocks, a severe tightening of acreage and marketing quotas, unduly high food prices and tax burdens, and much physical waste. At the same time, the allocative function of agricultural prices will again be hamstrung. To avoid such an outcome, American agriculture should act now to get its house in order while conditions are almost universally favorable, instead of waiting until conditions of duress are upon it again.

This writer agrees with Professor Brandt that such a revision of agricultural policy should be divorced from historically based "parity," however streamlined; that a positive government program should be instituted to aid producers of potentially surplus crops, particularly cotton, in converting their operations to other products with more favorable longrun prospects; and that commercial farmers should be assured of supplementary income payments in the event of sharp drops in farm prices.

However, Professor Brandt should have distinguished more carefully between general cyclical declines in farm prices and specific declines in particular farm prices under generally prosperous conditions. Under conditions of highlevel employment, a fall in the prices of particular farm products produced in quantities far in excess of prospective demand, should not be protected, either by high price or income supports or by the imposition of production and marketing controls. This would prevent changes in relative prices which are necessary to encourage the shifting of agricultural resources to other alternative products for which an expanding demand exists. Such a policy also would block the elimination of inefficient producers in times when alternative employment opportunities are available to them. Rather, government-guaranteed "stop-loss" levels of farm prices or incomes should be explicitly limited to conditions of general economic depression (defined in terms of some index of general economic activity, such as national income or employment) and should be sufficiently low to be ineffective during periods of general prosperity.

#### *Grain Storage Program Is Important*

One must agree with Professor Brandt on the need for a continued expansion of the production of feed grains, since it is primarily through livestock and livestock products that Americans consume cereal products. However, he fails to appreciate the importance of a grain storage program in attaining this objective. Thus, he comments favorably about the flexibility in our consumption pattern, by which we adjust to changing grain supplies by eating more or less meat and animal products. Except as insurance against wartime disaster, this point of view hardly warrants any enthusiasm. Instead, since consumers' food needs and tastes are relatively stable and since relative stability in livestock production is essential to the achievement of maximum efficiency, present instabilities in supplies of grain available for utilization have a considerable social and private cost. Hence, if present government storage programs were divorced from incongruous price-support objectives, they could contribute much, particularly through more nearly stabilized utilization of physical grain supplies in spite of year-to-year variations in yields.

Strangely enough, however, Professor Brandt appears to look upon storage programs primarily as a device for stabilizing prices of storable products against cyclical changes in demand, not stabilizing grain utilization against unpredictable annual variations in physical yield. Thus he proposes "a deliberate policy" of reducing "CCC holdings during periods of high farm income *to as low a level as possible* in order to have available the potential capacity for periods in which short-term price supports are needed" (*italics added*). Certainly the experience of 1929-41 casts strong doubt on the efficacy of using storage programs as a counter-cyclical device. Such a policy would also destabilize annual physical supplies and annual grain (and livestock) prices. Finally, it would leave us in a highly vulnerable position in the event of a run of bad years weatherwise.

In arguing that "It may not be necessary to create special grain reserves," Professor Brandt appears to underestimate the contribution which the very favorable weather conditions of the past decade made to American agricultural production during the 1940's. Particularly in the present rearmament period, can we afford to gamble on such continued good fortune by reducing grain stocks below present levels? This author thinks not. Rather, the time is ripe to establish new criteria of storage policy in *physical* rather than in price terms. Our present grain stocks should be looked upon as the absolute minimum amount for a prudent reserve in peace or war. Subject only to maintenance of this minimum, Congress should promptly establish certain rules by which grain would move out of storage in years of low yields, and into storage in years of high yields, in such amounts as to minimize fluctuations in physical utilization.

This writer shares both Professor Brandt's concern about inflation and his complete lack of enthusiasm for price and wage ceilings. However, present ceilings seem sufficiently flexible (in large part because they are ineffective in practice) to permit a considerable degree of allocative efficiency. At the same time, they are of psychological value in appeasing the strong political demands for dangerously inflexible controls. More important, although at considerable cost, the existence of such controls has made possible the creation of a stand-by administrative agency which could immediately move into high gear in the not improbable event of a new world war. To be sure, given the extent to which wages have been tied to cost-of-living indexes and industrial and farm prices to trends in production costs, we do have a system of institutionalized inflation in which only the organized groups directly share. However, such widespread "escalator" provisions do offer the opportunity to limit price and wage increases to measurable increases in production costs and living costs, while slowing the upward spiral further by judicious administrative delays. They also focus attention sharply upon the need for more fundamental action in the way of monetary, fiscal, and savings policies which will cause the crucial indexes to level off. In any case, insofar as price and wage ceilings are officially tied to cost indexes by legislative or administrative action, explicit provision also should be made for downward adjustments when and if the indexes decline.

With more specific reference to agriculture, those provisions of the Defense Production Act which tie minimum price ceilings to "parity" are deplorable. It is by now generally recognized that similar provisions during the early years of World War II gave inflation its head before it became possible to create that relative price structure within agriculture essential to meeting wartime production needs. Thus, under present law, a price ceiling cannot be imposed upon corn until its market price reaches parity. Hence, if disruption of hog production is to be avoided, the ceiling price on hogs must be fixed higher than otherwise. Or, if price ceilings are placed on both corn and hogs at their respective "parity" levels, only through accident will their relative prices fit prospective production needs.

These illustrations should make clear the desirability of giving the Secretary of Agriculture greater flexibility in establishing minimum prices with a view to production targets—hence without reference to parity prices—until the end of the present emergency period. Given such action by the Secretary, price ceilings on food and fiber products should be fixed at levels consistent with these minimum farm-product prices. In view of our crucial need for maintaining



or expanding our present national grain reserves, Professor Brandt is incautious in believing that present high meat prices should be brought down through immediate increases in livestock production. On the contrary, unless foreign sources of grain or meats can be tapped, it is doubtful if so "political" a commodity as meat can yet be freed altogether from price controls, despite the extreme difficulty of making such controls effective.

#### *Recommends Modified Price Control Policy*

Thus, unlike Professor Brandt, this writer would not abandon price supports and price ceilings altogether. He would work from production needs to price floors and ceilings, rather than the reverse, which would either seriously interfere with necessary shifts in agricultural production or would require an unwarrantedly large subsidy program. Furthermore, except insofar as forward pricing is used to facilitate allocative efficiency within agriculture, it would be better to widen the statutory range between price floors and price ceilings. By such a step, a more workable range would be provided within which flexible prices could serve their essential allocative function, while retaining the important psychological advantages of protecting farmers against unduly sharp general price declines and consumers against unnecessarily great general price increases.

While such proposals may not be politically acceptable, American agriculture should give them serious consideration. The national farm organizations have not recognized how vulnerable is their present political position, which continues to insist upon the sanctity of parity prices, and their "right" to high price floors against falling prices, while abandoning parity and opposing price ceilings when inflationary tendencies make it their short-run interest to do so. Protestations against high middleman profits and relatively low *average* levels of agricultural income are hardly convincing in view of the extraordinary prosperity which most *commercial* farmers have enjoyed recently. Historically, agriculture has received public good will to an extent which organized labor must envy. It can hardly afford to take such broadly-based public support lightly. The day may yet come when good will be of crucial value to American agriculture.

Thus far, this paper has been mainly concerned with the nation's commercial farmers, the half which contribute 90 per cent of the gross value product of American agriculture. But during the current rearmament period, when we must use all of our national resources at maximum efficiency, we cannot overlook the other half of our farmers who operate small subsistence or essentially non-commercial units. Quite properly, Professor Brandt recognizes the importance of this economic reserve, particularly in Southern agriculture. Obviously, their low-income problem cannot be solved through price supports, however high, because they have so little to sell. Instead, they must be helped by a positive public program aimed at facilitating their transfer to nonagricultural employment.

Such a program should include the wide dissemination of employment information and perhaps even subsidies to cover costs of changing jobs. While much of such a transfer will require inter-regional migration of people, the opportunity for moving capital to the under-utilized labor supply should be more fully exploited. Thus far, despite its possession of the only significant national reserve of industrial labor, the South has been largely by-passed in the expansion of rearmament industries. For military, sociological, and economic

reasons alike, the government should officially encourage and sponsor the movement of industry to the South during the rearmament period. The time is also at hand to make fuller use of the large Negro resources of the South, not through legally-enforced non-discrimination in industrial employment, but through courageous and firm private personnel policies. Recent experiences of the International Harvester Company at Memphis have demonstrated that, at least in the present favorable economic *milieu*, a private non-discrimination policy can work in the South.

Professor Brandt's emphasis upon the importance of chemical supplies, particularly nitrogen, is justified, but there is some question as to whether there is yet "a substantial unsatisfied demand for it." There seems to be no evidence of serious rationing problems in the sale of nitrogen at present prices to farmers. Hence, the Department of Agriculture's estimates of deficits of 500,000-600,000 tons of nitrogen a year, as reported by Professor Brandt, probably are based upon some criterion of physical soil needs rather than upon effective market demand. Hence, at the very least, further expansion of nitrogen production probably will require additional educational efforts to increase the actual use of fertilizers, insofar as this falls short of profitable levels at present farm prices. Even then, perhaps it still may be necessary to provide direct subsidies to bring effective demand up to the levels of input which are presently economic.

#### *Sound Policy Important To World Peace*

Finally, a word about international aspects of our agricultural policy. We are living in a world in which we must keep the economies of friendly nations viable, while doing what we can to help the less developed nations rise out of the morass of hunger in which Communism thrives. Our domestic agricultural policies must be brought into line with our more liberal international trade policies. Under present inflationary conditions at home, we have much to gain by lowering our barriers to imports of both industrial goods and farm products from abroad. At the same time, if we follow purchase policies in world raw-material markets which take due regard for our allies' domestic and import needs, we can do much to strengthen their economies as well as those of other potentially friendly nations, to which foreign trade may be their very life-blood. We should also purge our existing agricultural laws of "dumping" provisions which have done much to discredit the broader objectives of our programs of foreign economic aid. And, through the various agencies concerned with international loans and technical assistance, we should encourage and promote, in every possible way, increases in world agricultural productivity by which the Malthusian ghost may at last be laid.

Such a hopeful outcome will not result from spectacular dam projects and a flood of tractors, although in special circumstances, these will help. Rather, it will come from small teams of agricultural specialists who can carry technical "know-how" about agriculture to the more backward countries; help them to set up effective research, extension, and marketing services; and generally help them to help themselves.

America can never win a cold or hot war by might alone. Economic and moral rearmament is equally important. Only through hard-headed but humanitarian international leadership in world agriculture as in other fields, can we Americans bear nobly the robes of power which history has so generously bestowed upon us.

## APPRAISING THE DEMAND FOR AMERICAN AGRICULTURAL OUTPUT DURING REARMAMENT<sup>1</sup>

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APPRAISING the demand, rather than forecasting the demand, for agricultural output is the purpose of this paper. This approach is preferred primarily because an evaluation of past events is essential to any appraisal or forecast of the future demand for farm products. Then too, a re-examination of some of the concepts and methods involved in appraising both past and future demand is needed. Recent statements on farm price behavior and the demand for food have been somewhat confusing as to what demand is and how it may be measured. Here are some questions these statements have brought to mind.

1. What is "static," as opposed to "dynamic," income-elasticity?
2. Is Engel's law inconsistent with the larger proportion of income spent for food in the postwar period?
3. Why does one author indicate a price-elasticity of demand for food of  $-.2$ , another author  $-.41$ , another  $-.53$ , while still another says that, "an analysis of the demand for all food represents too high a degree of aggregation for most purposes?"
4. Is the elasticity of demand for all food an average of the elasticities for individual foods?

As a first step in appraising the demand for agricultural output during rearmament, let us consider broadly the ways in which rearmament affects the demand. We are concerned with both domestic and foreign demand. The relative importance of the two may be judged by Figure 1. The top line represents the aggregate quantities of agricultural products flowing into the United States market in each year. For the most part, these are composed of the new production of American agriculture as represented by the index of agricultural production. To this is added those imports which are directly competitive with the output of our own agriculture expressed as a percentage of the 1935-39 average volume of agricultural production. Close to the bottom of the chart is shown the quantity of domestic exports of agricultural products. They too are shown as a per cent of the quantity of the 1935-39 average agricultural production of the United States.

<sup>1</sup> Condensation of paper delivered at joint session of the American Economics Association and American Farm Economic Association, Boston, Massachusetts, December 26, 1951.

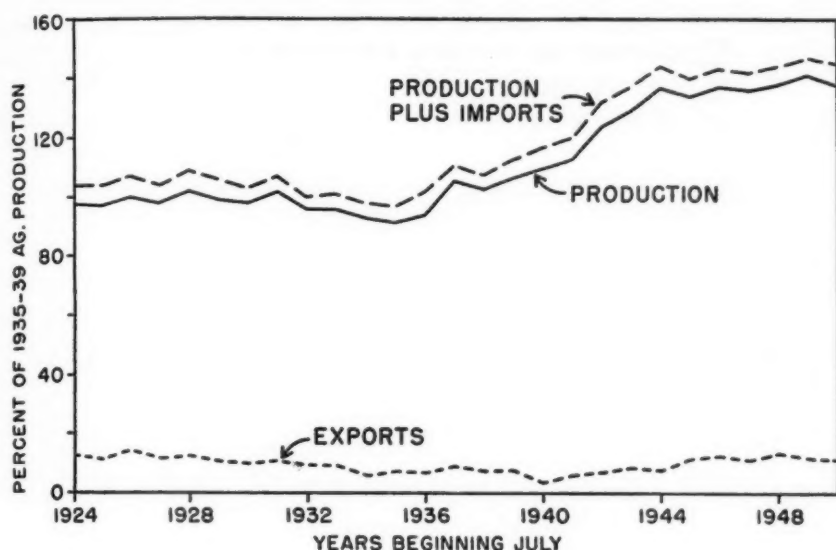


FIG. 1. VOLUME OF AGRICULTURAL EXPORTS, PRODUCTION, AND SUPPLEMENTARY INPUTS (Average Agricultural Production 1935-39 = 100).

A consideration of the chart immediately reveals that the increase in the quantity of agricultural products demanded for domestic use has been far greater in absolute amount than the increase in the quantity demanded for export. Relative to the 1935-39 level of agricultural production, there has been an increase since 1939 of about 30 per cent in the quantity demanded for domestic purposes. This compares with an increase of only about five per cent in the amount shipped abroad. In terms of the increase of each, relative to its own level in 1939, agricultural exports for the year beginning July, 1950, were approximately 50 per cent higher, whereas domestic utilization was about 30 per cent larger.

#### *Appraising the Demand for Output*

But how are we to interpret these facts in an appraisal of the demand for American agricultural output during the current rearmament period? Clearly, both domestic and foreign takings of our agricultural products increased during World War II. Is there reason to expect a similar increase during the current period of rearmament? As an aid in answering this question, it will be helpful to break down domestic demand into food and non-food uses. For food, data are available not only separating exports from domestic use, but also dividing domestic consumption into civilian and military consumption.

Figure 2 shows the distribution of food among (1) domestic civilian

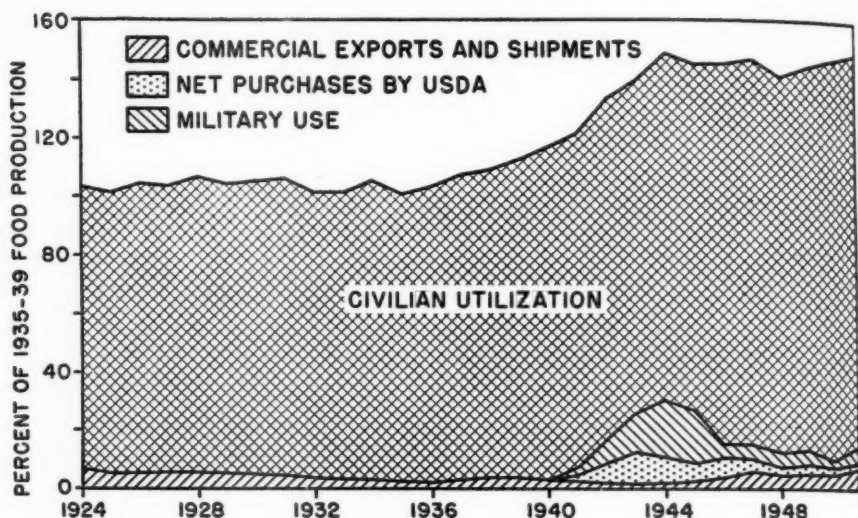


FIG. 2. VOLUME OF FOOD DISTRIBUTION BY THE UNITED STATES  
(Average 1935-39 Food Production = 100).

utilization; (2) military use, including amounts distributed by the military for civilian feeding in occupied countries; (3) Department of Agriculture purchases; and (4) commercial exports and shipments. Purchases by the Department of Agriculture have been primarily for foreign distribution by our government under lend-lease and other civilian programs. In many of the years since the beginning of World War II, Department of Agriculture food deliveries for shipment abroad have been far greater than commercial shipments and in no year have they fallen below two per cent of the 1935-39 level of total food utilization.

Any discussion of the demand for our agricultural output, like any discussion of demand, is plagued by differences in concepts as to what is meant by the word "demand." If the term is used in the so-called "market sense," demand is nothing more or less than quantity. Economists, however, ordinarily speak of demand in the schedule sense. If a change in the quantity of a commodity demanded is due only to the change in its price, "other things having remained constant," there has been no change of the demand in the schedule sense.

But recognizing the distinction between demand in the schedule and the market sense does not resolve the difficulties of measuring changes in demand schedules. Just what, for example, constitutes a 10-per cent increase of demand? Suppose we are concerned with consumer demand for potatoes and that identical amounts are consumed in two years, but the second-year price is 10 per cent higher than the first. Has there been



a 10-per cent increase in the demand? The answer must depend first of all upon whether there has been a change in the general level of prices. If prices of all commodities increased on the average by 10 per cent, so that there was no change in the real price of potatoes, there was then no change between the two years in the demand (schedule sense) for potatoes.

On the other hand, suppose there were no change in the general price level, but the price of potatoes increased 10 per cent while the quantity consumed remained constant. At first thought one may be inclined to say that this constitutes a 10-per cent increase in demand. Before coming to this conclusion let us look at another situation. Suppose in two years the price of potatoes is identical and there has been no change in the general price level, but second-year consumption is 10 per cent larger than the first. Suppose further that the increase in consumption represents no change in per capita consumption but results from a 10-per cent increase in population. I think most people will agree that this should be considered a 10-per cent increase in the total demand for potatoes. But if so, it would *not* then be consistent to say that, when there was no change in quantity consumed and a 10-per cent increase in the real price, there was also a 10-per cent increase in demand. Both could constitute a 10-per cent increase only if the price elasticity of demand were unity—and the demand for potatoes is inelastic.

If we are to measure changes of demand in the schedule sense, it should be in terms of changes in the quantity which we estimate would have been demanded at a fixed real price. An index of demand may be constructed by estimating first the quantity which would have been demanded in each of the years if real prices had remained the same as in the base period, and then expressing these quantities as percentages of the quantity demand in the base period. Such a procedure will result in fairly consistent measures of the shifts in demand of commodities having different price elasticities. Of course, if the estimated demand curve does not have constant elasticity, the index will depend somewhat upon the base period chosen but this is responsible for only minor discrepancies in most practical cases.

### *A Review of Other Studies*

A much more important question concerns the reliability of determination of the elasticity of the demand curve. Several different studies have been made of the demand for food in the United States. Girshick and Haavelmo,<sup>2</sup> using the "systems of equations" method, obtained a structural

<sup>2</sup> M. A. Girshick and Trygve Haavelmo, "Statistical Analysis of the Demand for Food: Examples of Simultaneous Estimation of Structural Equations," *Econometrica*, Vol. 15, No. 2, April, 1947, pp. 79-110.

equation indicating, at the mean value of price and quantity, an elasticity of demand of approximately  $-.25$ . A time series analysis reported by Miss Burk,<sup>3</sup> using only demand equation factors, indicated about the same elasticity. Cochrane,<sup>4</sup> however, obtains an elasticity "at the point of averages" of  $-.41$ , while Tobin<sup>5</sup> arrives at estimates of  $-.51$  and  $-.53$ .

Obviously, indexes of demand shifts which might be constructed on the basis of such differing elasticities will vary. Furthermore, any appraisal we may make of the effect of foreign aid programs upon prices of foods or other agricultural products must depend upon our estimation of the elasticity of demand. Consequently, it is necessary that we give careful consideration to the alternative methods that may be used in estimating demand curves for agricultural products.

The great majority of analyses which have been made of price-quantity relationships are of the "single equation" type, in which regressions of either price or quantity are obtained upon the other, and upon one or more additional factors included in a demand equation. The "additional" factors are those believed to be primarily responsible for the shifts of the demand curve.

It has been argued by Haavelmo,<sup>6</sup> Koopmans,<sup>7</sup> and others that such single equation methods should not be used. For example, Girshick and Haavelmo have stated, "These illustrations should be sufficient to show

<sup>3</sup> Marguerite C. Burk, "Changes in the Demand for Food 1941-1950," *This Journal*, Vol. XXXIII, No. 3, August, 1951, pp. 281-298. See footnotes 16 and 17, p. 297. The average of the regression of consumption on price and of the reciprocal of the regression of price on consumption is approximately  $-.25$ .

<sup>4</sup> Willard W. Cochrane, "An Analysis of Farm Price Behavior," Pennsylvania State College, School of Agriculture Progress Report, No. 50, May, 1951.

<sup>5</sup> James Tobin, "A Statistical Demand Function for Food in the U.S.A.," *Journal of the Royal Statistical Society*, Vol. CXIII, pp. 113-141. See especially p. 132.

This article was kindly called to my attention by Professor T. W. Schultz. In my opinion Tobin's estimates show too high an elasticity of demand because of two things:

1. The "income-elasticity" developed from family budget data is really an elasticity of expenditure with respect to income. Since the expenditure includes payment for marketing services and some food preparation and serving, in addition to expenditure for production on farms, it is higher than an elasticity for farm-produced food. It is definitely too high to use in conjunction with the time series index of food consumption.
2. Use of the reciprocal of the regression of price on consumption in the time series analysis to indicate the price-elasticity of demand assumes all observational error in the price series and none in the consumption series. Both of these things tend to bias the estimate of price-elasticity in the same direction.

<sup>6</sup> Trygve Haavelmo, "The Statistical Implications of a System of Simultaneous Equations," *Econometrica*, Vol. 11, January, 1943, pp. 1-12. Also, "The Probability Approach in Econometrics," *Econometrica*, Vol. 12, Supplement, July 1944, 118 pp. (and reprinted as *Cowles Commission Paper, New Series*, No. 4).

<sup>7</sup> Tjalling C. Koopmans, "Statistical Estimation of Simultaneous Economic Relations," *Journal of the American Statistical Association*, Vol. 40, December, 1945, pp. 448-466 (and reprinted as *Cowles Commission Paper, New Series*, No. 11).

that it is not possible to devise estimation formulae for the estimation of a demand function on the basis of the specification of this function alone. *That is, it is impossible to derive statistically the demand functions from market data without specification of the supply functions involved.*"

The author views this as a misleading although a technically defensible statement. If prices and quantities are accurately determined, and we have good indexes of demand shifts, it is possible statistically to estimate demand functions from market data without including any variables other than those directly involved in the demand equation. Furthermore, estimates of the parameters of the demand function can be made by these "single equation" methods, which are likely to be as reliable as those obtained by "systems of equations" methods. However, it should be recognized that the usual least squares regression analysis involves a bias which should be taken into account. This should be done by the "systems of equations" methods, or by some other method which makes allowance for the effect of observational errors in the "independent" variables upon the estimated parameters. Most studies of demand for agricultural products have not faced this problem of "least squares bias."

One interesting method has been used for estimating the elasticity of demand which, in a way, adjusts for least squares bias. Cochrane obtains first the regression of consumption on per capita disposable income, ratio of food to non-food prices, and time. Based on the coefficients thus obtained, he adjusts food consumption for the apparent "influence" of per capita disposable income and of time. He then calculates the gross regression of the food price ratio on these estimates of consumption.

The procedure can be defended on the ground that the resulting regression of the price ratio on per capita consumption is a sort of average of the regressions which might have been obtained: (1) by minimizing with respect to the price ratio and (2) by minimizing with respect to the per capita consumption. Unfortunately, however, Dr. Cochrane makes the mistake of estimating the per capita consumption under conditions when disposable income and time were at their *zero* levels rather than their average levels. That these estimates themselves are ridiculous under conditions of zero income is beside the point. The important thing is that their average is much less than the true average consumption of food. Using this average inevitably results in the computed elasticity of demand being too large if the regression of the price ratio on the consumption was the true functional relation. If the mean of actual per capita consumption had been used in place of that of the adjusted data, Cochrane would have obtained an estimated elasticity of approximately  $-.3$  instead of  $-.4$ .

In spite of the importance of dealing adequately with the problem of least squares bias in arriving at estimates of elasticity of demand,

greater inaccuracies of estimates commonly result from other sources. There is the problem of observational errors which are correlated with the true values. Another difficulty lies with using variables which are demonstrably faulty as measures of changes in demand. Examples of two pairs of equations will serve to illustrate my point.

Some years ago, two correlation analyses made in the Bureau of Agricultural Economics were reported as yielding the following regression equations:

$$(1) \quad Y = 111.083 + .228X_1 - .345X_2$$

$$(2) \quad Y = 104.321 + .221X_1 - .285X_2 + .139X_3$$

Equation (2) is the one used by Cochrane in making the estimate of the elasticity of demand referred to previously. In each equation the X and Y symbols represent the following:

Y = Index of per capita consumption of food (1935-39 = 100)

X<sub>1</sub> = Index of per capita disposable income (1935-39 = 100)

X<sub>2</sub> = Ratio index of food prices (1935-39 = 100) to index of non-food prices (1935-39 = 100)

X<sub>3</sub> = Time (origin at 1921)

Note that X<sub>1</sub> represents money income, not "deflated" or real income.

#### *Validity of Relationships During Inflation*

Let us examine the relationships to see if they could be expected to hold true under conditions of inflation. Suppose the index of price level should double, rising from 100 to 200 with no change in the per capita real income and with no change in the ratio of food to non-food prices. This is what one might expect as a result of changing from an equilibrium situation at one price level to an equilibrium situation at a price level twice as high. Such a change should not logically be attended by any change in the per capita consumption of food. According to the two equations, however, the estimated index of consumption would rise by 22 or 23 points as a result of the rise in money incomes. Surely the two equations cannot represent the true relation between disposable income and food consumption under the conditions we have assumed!

Miss Burk reports two different regressions for much the same set of data, both based on annual observations from 1922 to 1941. After changing the X's and Y's to other symbols for ease of comparison, the equations are as follows:

$$(3) \quad \log C = 1.94 + .24 \log I - .20 \log P$$

$$(4) \quad \log P = 6.94 + 1.04 \log I - 3.49 \log C$$

$$(4.1) \quad \log C = 1.99 + .298 \log I - .287 \log P$$

Equation (4.1), it will be noted, is identical with Equation (4) except that it has been converted for ease of comparison with Equation (3). The symbols used have the following meaning:

C = Index of per capita consumption of food

P = Index of retail prices of foods

I = Index of per capita disposable income

Both prices and incomes are measured in current dollars. The two equations describe rather different demand surfaces. If we have no further information, the best guess we could make is that the true surface lies somewhere between the two.

A test of the two equations under the assumption of different price level situations, indicates that each of them more nearly meets the test of consistency than did Equations (1) and (2). In order for them to be altogether consistent, it would be necessary for the income-elasticity and price-elasticity coefficients—the coefficients of  $\log I$  and  $\log P$  in Equations (3) and (4.1)—to be identical except for sign.

If the equation is in the form where price is the "dependent" variable, as in Equation (4), the condition of consistency for price level changes is precisely met only if the percentage change in price is equal to that of income—a coefficient of 1.0 in the present instance. For any particular commodity it is not necessarily true (and is probably unlikely) that a given change in real income would result in an equal percentage change in price. Hence, the investigator should try distinguishing between a change in "money" income and "real" income.

It has been the experience of this writer that when this is done for individual agricultural products, we often find a change of real income is associated with a smaller change of price than is an equal change in price level. Consequently, if we use money income as one variable and do not introduce price level separately, the regression coefficient reflects a sort of average influence of those income changes due to price level change and of those due to changes in real income. This may all work out well enough if we are dealing only with a period in which there is little change in price level or a consistent pattern of relationship between changes in real income and of price level. If, however, there is a large change in price level and a shift in the relationship between price level and real income, we cannot expect a previously observed relation between money income, prices, and quantities to remain accurate.

One way of distinguishing between price level and real income effects is to convert both the price series and the income series to dollars of constant purchasing power by dividing by the consumer's price index. Another is to include price level as a separate variable. When both the



price and income are deflated, the following regression equations are obtained:

$$(5) \quad C = 92.05 + .236 I - .142 P$$

$$(6) \quad C = 105.09 + .315 I - .325 P - .224 T$$

In this case:

C = Index of consumption of food per capita (1935-39 = 100)

I = Index of disposable personal income per capita in dollars of 1935-39 purchasing power (1935-39 = 100)

P = Index of food prices in dollars of 1935-39 purchasing power (1935-39 = 100)

T = Annual time, origin at 1921

These correlations, like those yielding Equations (1) and (2), are of annual data from 1922 to 1941 inclusive.

Note that the coefficients of I and P are considerably larger for Equation (6) than for Equation (5). The regression coefficients also differ considerably from those of Equations (1) and (2) which used the ratio of food to non-food prices instead of deflated food prices, and an index of incomes in current dollars instead of in dollars of constant purchasing power.

When regression planes are fitted so as to minimize the squared deviations of price and the squared deviations of income, they are found to differ widely from the ones described by the foregoing equations. For the set of variables not including time, the three regressions may be summarized as follows:

Variable of Minimization	R <sup>2</sup>	Change in Consumption Index per Unit Change of:	
		Real Income	Real Price
Consumption	.781	.236	-.142
Income	.827	.306	-.216
Price	.405	.359	-.672

When time is included as a variable the results are as follows:

Variable of Minimization	R <sup>2</sup>	Change in Consumption Index per Unit Change of:		
		Real Income	Real Price	Time
Consumption	.881	.315	-.325	-.224
Income	.941	.367	-.410	-.292
Price	.834	.398	-.574	-.375

The difference between the regression coefficients casts doubt upon the precision of any possible coefficients of price-elasticity or income-elasticity of demand from these data. If we take a simple geometric mean of the three regressions of consumption on price for each set of results we obtain an average coefficient of  $-.274$  in case of the three-variable correlation and an average of  $-.424$  for that with four variables.

In spite of the lower coefficients of multiple determination, the regressions of these correlations provide much closer estimates of consumption for the past two years than do the two correlations using indexes of money incomes measured in current dollars—the correlations resulting in Equations (1) and (2). The estimate of food consumption for 1950 from Equation (5) is substantially the same as that obtained from Equation (3).

### *Regression Analyses Are Defended*

If all this has raised some skepticism concerning the precision of any estimates of demand elasticity for food as a whole, it is well. However, it should not lead to the opinion that all regression analyses are worthless for judging probable food prices under specified conditions of income and civilian food supplies, or alternatively, in judging probable consumption under specified conditions of income and food prices. Quite the contrary, for widely varying estimates of price-elasticity and income-elasticity may yield substantially the same estimates of consumption, provided the price-elasticity and income-elasticity coefficients in each estimating equation are consistent within those equations.

Fox has expressed the opinion<sup>8</sup> that, "An analysis of the demand for all food represents too high a degree of aggregation for most purposes." There is much to be said for this view, particularly in analyzing the year-to-year changes with which Fox was dealing. However, it is a mistake to say, as Fox does, that, "Aggregative analyses of the demand for all food yield regression coefficients which are weighted averages of these diverse elasticities for individual foods." Consumption of all food is more inelastic with respect to price than is the average for all individual foods. This is because, generally speaking, each individual food has many reasonably satisfactory alternative foods, but you cannot persuade a man with an empty stomach that anything else is even a reasonably satisfactory substitute for food!

Much of the difficulty in obtaining more precise estimates of demand elasticity for all food probably lies in the faults of the indexes of food consumption and prices. These involve not only problems inherent in

<sup>8</sup> Karl A. Fox, "Factors Affecting Farm Income, Farm Prices and Food Consumption," *Agricultural Economics Research*, July, 1951, Vol. III, No. 3, p. 78.

index number construction but also difficulties in measuring consumption and prices of individual products. Calendar-year estimates of consumption of such seasonally-produced, yet storable, crops as potatoes, sweet potatoes, and apples are probably grossly in error. Furthermore, calendar-year average prices of seasonally-produced foods which vary widely in quality characteristics and in quantities available at different seasons of the year are likely to be poor indications of a true average price.

Space limitations make it impossible to present complete regressions and other results for all the pertinent sets of variables relating to the demand for food. It must suffice here to conclude that better estimates of the elasticities of demand are obtained for the 1922-1941 data when one uses prices and incomes expressed in dollars of current purchasing power than when the deflated series are used. This is due to the particular characteristics of the data at hand, and probably results from the errors of observation in the consumption estimates being more important, relative to the deflated series, than to those expressed in dollars of current purchasing power. It also appears that more reliable elasticities result when time is not included as one of the variables.

### *"Dynamic" in Economics Defined*

Sometimes elasticities of demand estimated from survey, or other "cross sectional" data, are referred to as representing "static elasticities," whereas estimates resulting from regressions of time series data are called "dynamic elasticities."<sup>9</sup>

This usage raises questions as to what is meant by "dynamic" in economics. Basically there are two concepts. One is that anything which departs from a "stationary state" in allowing for change of more than a single "cause" and its attendant effects; involves dynamics. Thus, if we deal with data over a period when there are population changes, fluctuation of income, trends in consumer preferences, etc., we are dealing with a dynamic situation as far as the relation of price to quantity is concerned. Presumably a dynamic price-elasticity of demand results whenever an elasticity of demand is obtained from such a "dynamic" set of data. Or perhaps one may take the view that a "static law of demand" is one which expresses the relation of quantity demanded to commodity price when all other things remain constant, while a "dynamic law of demand" is one which specifies how the quantity changes, not only in response to changes in the price of that commodity, but how it is related to prices of all other commodities.

The other concept of economic dynamics is that there are important

<sup>9</sup> See, for example, Burk, *op. cit.*, p. 285.

lags and momentums involved in the operation of economic forces and that economic dynamics is concerned with the study of such lags and momentums. To be consistent with this view, the dynamics of demand concerns such things as the difference between long-term and short-term demand curves, and the lags in the effect of income changes or other factors upon demand.

*We would do well to limit the term "dynamic" in economics to the second concept. If we do so, there is no justification for calling income elasticities derived from food expenditure surveys "static," and those derived from time series data "dynamic."* It is true that the aggregate quantity of a commodity consumed in any one year may have been influenced by prices, by incomes, or by general price levels of previous years. It is no less true that quantities purchased by a family or a group of families may have been influenced by prices and incomes in periods prior to the one under study—or for that matter by expected future incomes. *Nevertheless, we should not consider that we have discovered a dynamic elasticity unless we have found a basis of estimating how the quantity demanded responds to income or to price in varying degrees depending upon the lapse of time.*

Very few analyses of the demand for food—either in the aggregate or for individual foods—have explicitly dealt with the dynamics of demand in the latter sense. It has perhaps been the opinion that when annual data are used in time series analyses, the lags of response were not sufficient to prevent the demand functions obtained from being substantially long-time normal functions. For meat, this author has some evidence that this is not the case, and it is suspected that similar evidence can be developed for other foods.

Summarizing the results of correlating one out of many sets of variables which were used in studying meat demand illustrates a method of analyzing some of the dynamics of that demand. Using annual data for the 1922-1941 period, the following five variables were correlated.

1. Log of meat prices in cents of 1935-39 purchasing power.
2. Log of consumption of meat pounds per capita, average of previous five years.
3. Log of per cent given year consumption per capita is of average of previous five years.
4. Log of disposable personal income per capita in dollars of 1935-39 purchasing power.
5. Log of per cent given year consumer's price index is of its average for the previous five years.

The results may be summarized as follows:

## ORIGINAL REGRESSION COEFFICIENTS

"Dependent" Variable	Change of Log of "Dependent" Variable per Unit Change in Log of:				
	Price	Consumption Average	Consumption Per Cent Average	Income	Price Level Change
1. Price of meat	—	-1.012	-1.279	.544	.421
2. Consumption five-year average	-.859	—	-1.133	.470	.362
3. Consumption per cent five-year average	-.751	-.784	—	.417	.307
4. Income	1.627	1.657	2.123	—	-.533
5. Price level change	1.520	1.543	1.888	-.644	—

## STANDARD ERRORS OF REGRESSION COEFFICIENTS

	1	2	3	4	5
1	—	.102	.067	.051	.082
2	.086	—	.104	.065	.083
3	.039	.072	—	.039	.075
4	.152	.228	.198	—	.190
5	.295	.354	.416	.230	—

## CONVERTED REGRESSION COEFFICIENTS AND COEFFICIENTS OF DETERMINATION

Variable of Minimization	Change in Log of Price per Unit Change in Log of:				
	R <sup>2</sup>	Consumption Average	Consumption Per Cent of Average	Income	Price Level Change
1. Price	.984	-1.012	-1.279	.544	.421
2. Consumption five-year average	.891	-1.164	-1.320	.548	.422
3. Consumption per cent five-year average	.970	-1.044	-1.332	.555	.408
4. Income	.964	-1.019	-1.305	.615	.328
5. Price level change	.882	-1.015	-1.242	.424	.658

A smaller percentage change in price is associated with a one per cent change in the five-year average consumption than with the percentage which the given year is of that five-year average. Therefore, we may presume that in the long run, the demand for meat is less inelastic than in the short run. The more inelastic short-run demand also is indicated by a net regression of the logarithms of link relatives of "deflated" prices of meat on logs of link relatives of per capita consumption. Correlating those and the logs of link relatives of "deflated" disposable income per capita, gives a net regression of log price on log consumption of  $-1.49$ . These indications



of varying elasticities, depending upon the length of period of change, should be considered in conjunction with the tendency for meat supplies to vary in a sort of irregular composite cycle. When otherwise comparable analyses are made using annual time series data in which the set of observations for each year includes only the consumption of that year, the regression of log price on log consumption is between  $-1.49$  and  $-1.01$ .

The other evidence of dynamic influence in this meat demand analysis is the positive regression of "deflated" meat prices on the measure of price level change (per cent which the consumers' price index for the year is of its average for the previous five years). Apparently quite apart from changes in real income, the demand for meat is increased by a rising general price level and is decreased by a falling general price level.

It should not be expected that the aggregate demand for all food exhibits similar dynamic tendencies—or at least not in the same degree. Individual foods may be expected to be subject to varying dynamic responses to changing price levels and to changing per capita supplies of the food in question. There is no evidence that the long-time price-elasticity of demand for all food differs significantly from that indicated by using annual data of price and quantity which are concurrent. In the demand for all food, there does seem to be a similar relation to that found for meat between the demand and price level change. In the case of all foods, however, the limitations of the data, including the degree of aggregation of the all-food indexes, seem to prevent very satisfactory determination of the dynamic relationships.

Let us now return to the over-all demand for food in relation to the defense economy. Figure 3 is an approximate demand curve for all food. This is the best simple approximation that this author can make using only the three variables—food consumption, retail food prices, and disposable income. It takes some account of the least squares bias resulting from observational errors of the "independent" variables since it is a "weighted average" of the several least squares regressions for the period 1922 to 1941. This author should be the last to claim that it represents precisely the true functional relationships involved. Surprisingly enough, although it is developed from prices and income expressed in current dollars, it applies almost as well when prices and income are expressed in dollars of 1935-39 purchasing power.

It must, of course, be recognized that any such demand curve for food has important limitations. Indexes of food consumption and prices are subject to error—including that inherent in trying to reduce the consumption and prices of a wide variety of foods to two summary numbers for each year. The curve also fails to take any explicit account of the dynamic aspects of food demand with respect to income or price level. In addi-

tion, partly because of dynamic influences, the curve probably fails somewhat in expressing accurately the "normal" or long-time relationships between consumption, price, and income. By using time as an independent variable or a different index of shifts of demand, one may conclude that the price-elasticity is approximately  $-.4$  rather than  $-.25$ . Nevertheless, such a curve or family of curves can be very helpful in appraising some of the general aspects of the influence the defense program may have on food price and consumption relationships.

In Figure 2, the total quantity of food utilization was broken down into four categories: (1) commercial exports and shipments; (2) U. S. Department of Agriculture net purchases; (3) military use; and (4) domestic civilian consumption. Since 1940, the first three have been fairly directly dependent upon the actions of our federal government. There can be no question but what this is true of military and USDA purchases.

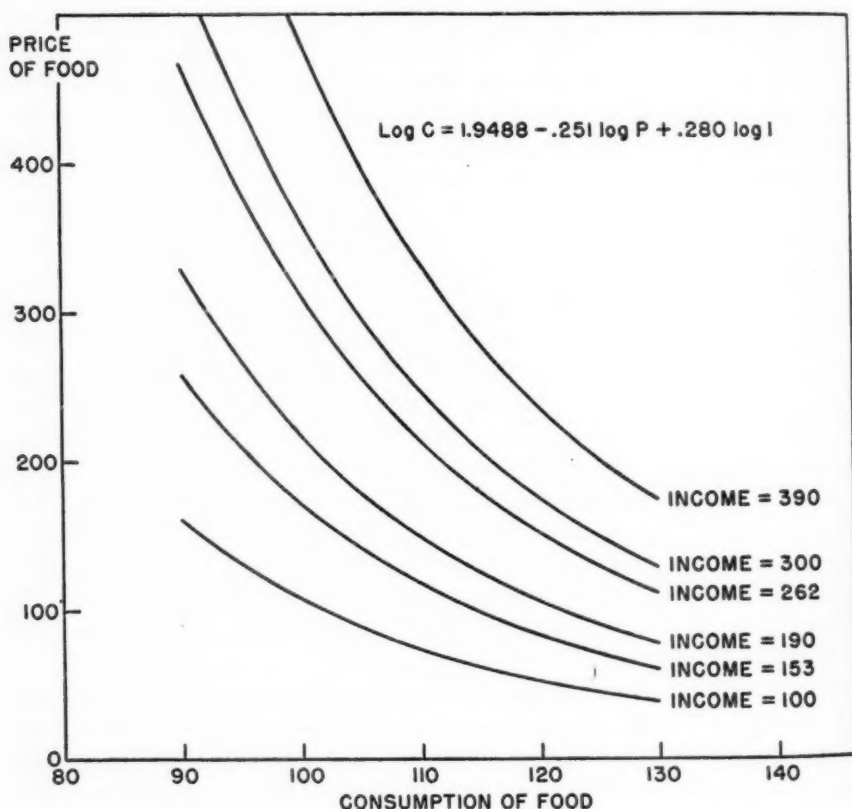


FIG. 3. DEMAND CURVES FOR FOOD AT SEVERAL INCOME LEVELS  
(Average 1935-39 = 100).

But commercial exports and shipments since the war have also been financed largely through funds from our own treasury. The volume of food devoted to these uses in one year amounted to as much as 30 per cent of our 1935-39 food production. Since the war, the smallest quantity thus used was in 1950, when it was 9.9 per cent. The preliminary estimate for 1951 is 14.5 per cent.

As a result of the highly inelastic demand for food, changes in the amount of food removed from the domestic civilian market are highly important in their effect upon food prices.

Take 1950 as an example. Exports, plus military and other government purchases, amounted to 9.9 per cent of the 1935-39 average food production. If they had been only 2.3 per cent as in 1940, supplies available in the domestic market would have been increased by 7.6 per cent of the 1935-39 level of production. Such an increase of food supplies (assuming that it was not temporary so that its effect would be moderated by building up stocks) might be expected, based on the above indicated elasticity to decrease retail food prices by about 30 per cent.

Similar appraisals may be made of the effect of various possible levels of government-financed purchases of food during the rearmament period. Allowance must be made for the fact that increases in the size of the army reduces the number of civilians. Obviously, too, reductions in per capita civilian supplies cannot be expected to result in quite the same increases in food prices under OPS as under free market conditions.

During World War II, there was a great increase in the per capita civilian demand for food in the United States. Is there likely to be a similar increase during rearmament? Let us look at the indexes of the per capita and total civilian demand for food shown in Figure 4. These were constructed on the basis of the concept outlined earlier. The index of total demand was secured by multiplying the index of per capita demand by an index of the number of persons eating out of civilian supplies.

The indexes are by no means perfect measures of the changes in the civilian demand for food. Even if the elasticity of demand were perfectly accurate, they would reflect whatever inaccuracies exist in the indexes of food consumption and food prices, as well as the limitations of estimating "real" prices by dividing current prices by the consumers' price index. The method of constructing the indexes of the demand for food is quite inapplicable to the period of wartime scarcities and food rationing.

#### *Indexes Give Perspective to Appraisal*

In spite of these limitations, the indexes may help to give perspective to the appraisal of demand during rearmament. Generally speaking, the fluctuations of the index of per capita demand are similar to the fluctua-

tions of an index of "deflated" disposable income per capita (Figure 5). It seems beyond question that there could have been no such increase in the per capita demand for food as occurred during the war had it not been for the increase in "deflated" income per capita. The divergence between the two lines in the 1920's and since 1946 is partly the result of limitations of the two scales used in the chart. Nevertheless, it may be seen that for the years 1946, 1947, and 1948, the index of food demand was unusually high relative to the income index. This is attributed partly to the dynamic effects of the rapid rise in price level and money incomes,

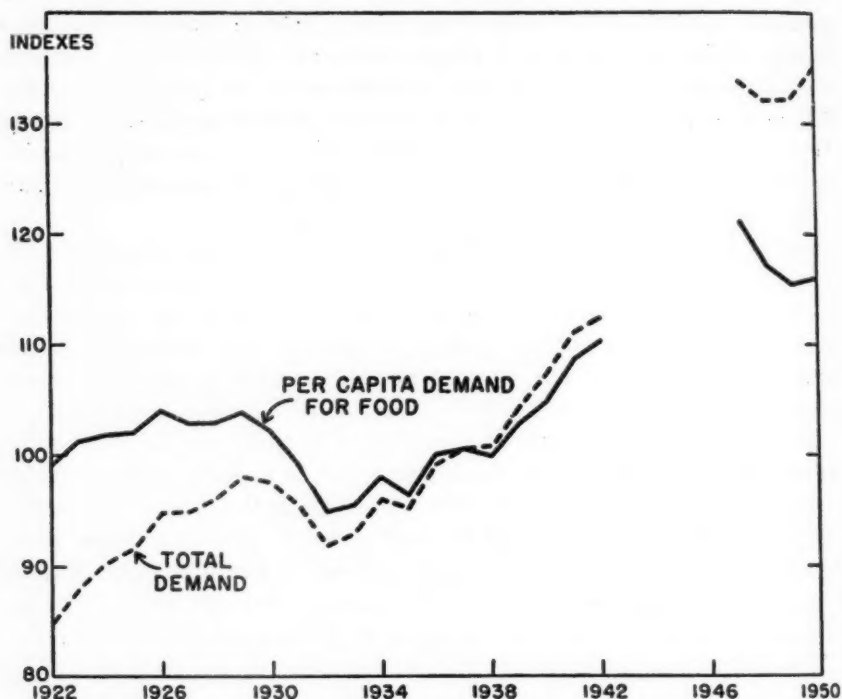


FIG. 4. INDEXES OF TOTAL AND PER CAPITA DEMAND FOR FOOD.

and partly to the shortages of durable consumer goods during the first few years after the war. During and following the defense period, it is altogether likely that some similar discrepancies may develop. It is, nevertheless, to be expected that changes in the per capita demand for food in the future, as in the past, will be dependent primarily upon changes in "deflated" disposable income per capita.

There seems to be no prospect for as great an increase in "deflated" disposable income per capita during the next few years as occurred dur-

ing the war. Our production in recent years has been much nearer to capacity than it was prior to the war. According to an analysis by the staff of the Joint Committee on the Economic Report,<sup>10</sup> it seems possible that, in terms of constant prices, the increase in the gross national product from 1950 to 1954 might amount to 28 per cent. Even this is far short of the 62 per cent increase which was attained from 1940 to 1944. Because of

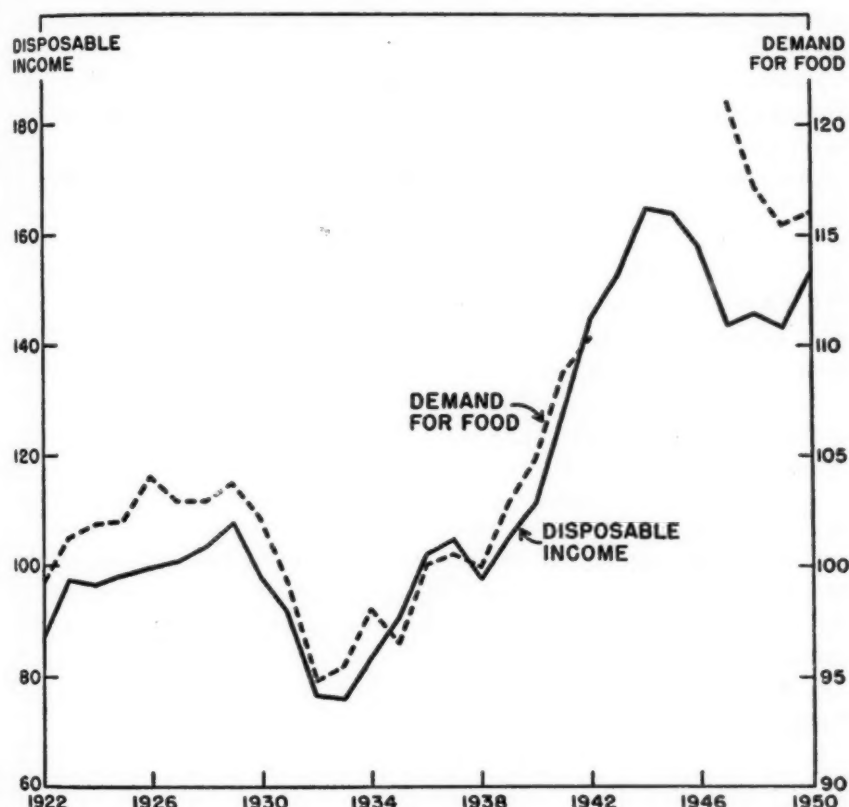


FIG. 5. PER CAPITA INDEXES OF DEFLATED DISPOSABLE INCOME AND DEMAND FOR FOOD (Average 1935-39 = 100).

increasing taxes, disposable income will no doubt be reduced relative to total personal income and the GNP. According to estimates for the third quarter of 1951, deflated per capita disposable income (seasonally adjusted) is almost identical with the level for 1950. With increasing govern-

<sup>10</sup> *Inflation Still A Danger*, Senate Report No. 644, 82nd Congress First Session, Washington, 1951, especially Table III, p. 37.



ment expenditures and higher taxes, real disposable income may even decrease.

Please note that this gives little basis for saying what may happen to food prices or food expenditures measured in current dollars. That will depend upon what happens to the price level and to the supplies of food available for domestic consumption as well as upon the level of demand. Food prices, of course, will also depend upon price controls, but there is a limit to the extent to which such controls can be effective without rationing.

At any given level of money income and in the absence of widespread and effective rationing, both food prices and expenditures will depend upon the available supplies. Changes in our government purchases for military purposes and foreign aid are consequently of prime importance.

### *Conclusion*

In summary, these are the main points brought out in this discussion:

1. Changes in demand can be measured if—and only if—we can estimate what quantities would have been demanded at some given level of “real” prices—that is of prices measured in dollars of constant purchasing power.
2. In recent years agricultural exports from the United States, as well as purchases by government agencies, have been largely dependent upon the actions of our own government.
3. Because of the inelastic demand for food, such government action has been very important in affecting food prices.
4. Since the beginning of World War II, there has been a very marked increase in the total demand for food in the United States, due partly to the increase in population and partly to an increase in the per capita demand.
5. The increase in the per capita demand for food has been primarily the result of an increase in real income—and production—per capita.
6. There is no prospect for as great an increase in the “real” demand for food during the next few years as occurred during World War II.
7. Changes in food prices will depend primarily upon the amount of the food supplies available for domestic use and upon monetary and fiscal policies affecting the value of money.

## DISCUSSION

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Although both the Working and Brandt papers analyze aspects of the rearmament situation, their differing methodological orientations result in presentations which have very few common reference points. Both are interesting and provocative papers.

Professor Working is concerned with appraising the demand for agricultural products during rearmament. A simple summary of his search would be to say that he finds it necessary to devise improved methods of handling (a) sheer inflation in the income stream and (b) the aggregate demand for food. The method of procedure combines a critical review of a few recent distinguished statements on demand theory and analysis, together with some reports of his own research, presumably over the past several years. The argument is brilliant and persuasive, even though there are many technical and methodological issues in the statement upon which this writer is not well informed.

Professor Working refrains from any forecast of demand for agricultural products, but he supplies some of the ingredients for such a forecast. He concludes by commenting on a number of issues in the light of the technical discussion which makes up the bulk of the paper. Two of his inferences are especially noteworthy: one, that the inflationary process increases the demand for meat quite apart from any changes in real income; the second, that the difference between agricultural exports, plus military and other government purchases in 1950 over 1940, was sufficient to make as much as 30 per cent difference in the retail price of food. The treatment of such issues remains suggestive and fragmentary, however, thereby seeming to forecast a second essay in which the various interpretations will be worked out more fully.

Professor Brandt's paper can be divided roughly into two parts. The first half presents a survey of the production or resource utilization problem in agriculture. The second half deals with more strictly policy issues. It is in these latter pages that the author really warms to the task. He leaves no doubt regarding his conclusion that the goal of policy should be an agriculture organized on the principle of a free-market economy. He concludes with the admonition that now is the time to correct past errors of price support policy and related matters.

If one were to trace the main strands of thought through Professor Brandt's paper, he would notice two or three major points. The paper opens with an examination of the period of rearmament and the requirements of rearmament upon agriculture. The conclusion is drawn that agriculture faces essentially a problem of speeded up long-run development. Implicitly then, the current rearmament period is treated as a normal period with the result that the paper is directed to what we might call long-run normal considerations.

There is a concern about the relation between current, and past, agricultural programs and democracy. This runs quite deep throughout most of the paper.

*Some Important Factors Slighted*

Another influential conceptualization of the paper is the treatment of the quest by farmers for parity prices as primarily an attempt to give the farmer

security against "a disastrous shrinkage of income" in an industrial depression. Other aspects of the parity issue are noted, but it is this basic focus of anticipated low demand which is emphasized. And it is from this emphasis that he strikes a hard blow against the farmers' insistence upon tying farm price ceilings to the parity formula, when there is not even a remote chance of an industrial depression during a rearmament or mobilization period.

This method of dealing with the parity issue seems to slur over a number of points of interest to general economists. Particularly, it may be instructive to review something of the history of the "parity" price formula. It is significant that the "parity" idea was first popularized by the simple publication of a "purchasing power" index for farm products by the U. S. Department of Agriculture in *The Agricultural Situation*. This seems to be a clear case of taking "Say's Law"—that goods exchange for goods—quite literally. So the question then became one of why farm products were exchanging during the 1920's and early 1930's on such unfavorable terms. The answer given, as we read the record, was that the farmers were at a "disadvantage" in an economy where other groups—corporations and trade unions—had economic power. To achieve "equality" was the goal of parity. It was not until some time after "parity" was written into the AAA legislation that the depression issue, in the Keynesian sense, won wide recognition.

This difference in interpretation of the parity issue is quite important in the way one views the issues in agricultural policy. At any rate, the position taken by Professor Brandt enables him to ignore almost completely the whole question of economic power, or monopoly power, in the economy.

However, the general question in this writer's mind about Professor Brandt's paper is a methodological one. All of the other issues are really derivatives therefrom.

To state the matter positively, Professor Brandt seems to have placed too much reliance on his free-market model in his analysis of policy issues. This is becoming something of an occupational disease among agricultural economists.

Models are useful, even indispensable analytical tools, and we all use them, under some name. But the problem arises from trying to use the model both as the vehicle of analysis and the criterion of policy. The result is that the "problem" or "problems" turn out to be the "discrepancies" between this mental construct and the nature of things.

Among the interesting consequences of the method is the frequent conclusion by economists that the policy problems are really not "economic" problems at all, the difficulties are viewed as being in the political, educational, or moral sphere. Discussion which begins by reference to a tight series of propositions becomes diffused and sprawling. This is defensible too, in a way, since policy action does involve many aspects of life. But there is a difference between (a) analyzing a situation in broad terms and concluding by pointing up the issues that economists are best equipped to work on, and (b) starting with the assumption that the economist has the answer in his model and concluding with the admonition that the real world should be made over in the image of the model. This reliance upon models by economists also has the consequence of widening the breach between the analysts and the plain people of this country.

It is not difficult, by contrast with constructed models, to demonstrate that anything short of freely flexible prices and consumer sovereignty leads to

malallocation of resources. The conclusion is that any attempt at price stabilization is economically wasteful and inimical to the general welfare.

But when one takes as a reference point some great issue of our times, such as the lack of security of expectations, the lesser issues, even of parity prices, come up in a very different light.

Our forefathers saw clearly that security of expectations regarding persons and the use of things was indispensable to liberty and individual development. They devised ways of living and working together which gave reasonable assurance of such security, basically the laws of property. John Locke and Adam Smith saw the deeper meaning of these insights and developed theories of property and economics which made them at once prophets and architects of the new age.

Modern agriculture, as we know it, has been nurtured by and developed within these rules. This is, in a way, the main contention of Professor Brandt. Now, farmers are very much aware of this, too, and are grateful for the opportunity which this country has afforded them. But there is a *difference*.

### *We Must Take A Forward View*

The farmers have concluded, after many decades of struggling over the "monopoly" issue, that they always stand under the threat of a squeeze by the free play of the market where other groups have economic power and they do not. This is their first concern over "parity." Secondly, they, along with most of the rest of the plain people of the world, have come to have an overriding fear of a new threat to their security of expectations, namely insecurity of price expectations. The quest for parity has come to include a tolerable degree of this security too.

Now it is surely true, as Professor Brandt points out, that such activities get into politics and this, together with related concerns and the cost of wars and armaments, carries with it all sorts of dangers including inflation.

However, the conclusion remains that Professor Brandt's faith in his model has turned his eyes back toward earlier centuries instead of ahead. This writer does not pretend to know the answers, but the general task clearly is that of working out a philosophy of democratic economic progress that makes sense in the second half of the twentieth century. Among other things, this requires dealing with valuation issues in a context of dynamic technology and conflicts of revolutionary dimensions. We must not let the demonstrated vagaries of loosely conceived functional finance or the vicious consequences of Marxian dogma turn us back to too great reliance on John Locke and Adam Smith. This is the great mistake of the aggressive conservatives of our time. Should intellectuals do the same, we shall lose contact with the human enterprise at the cutting edge of social change.

## FARMER-DEBTOR RELIEF LEGISLATION IN THE UNITED STATES AND IN SWITZERLAND—A LESSON IN AGRICULTURAL POLICY?\*

ERNEST FEDER

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THE United States Congress is considering again permanent legislation to replace the temporary Frazier-Lemke Act, which expired in 1949. Passage of legislation dealing with farmer bankruptcies during a period of general and agricultural prosperity is hailed by many as a wise procedure.<sup>1</sup> When a depression or a natural catastrophe, such as a prolonged drought, forces farmers off their farms, there is usually no time for clear thinking and preparation of well-balanced measures to minimize the distress.

Problems of farm foreclosures and bankruptcies fall within the otherwise widely-explored field of agricultural policy. But little research has been undertaken on the economic and social effects of farm bankruptcies and bankruptcy legislation on farmers, the farm community, and the economy as a whole. This is in spite of the fact that business failures are important economic occurrences and seem to affect most seriously those sections of our economy normally viewed as more or less perfectly competitive, such as agriculture and the small business firm.

The experiences of Switzerland, where elaborate over-all measures against the over-indebtedness of farmers were taken during the depression and again recently, may be of value to us. A comparative analysis is of interest because Switzerland's fundamental legal and economic institutions are similar to our own. Its constitution is much like the United States' and it is a stronghold of the free-enterprise system. As in the United States, the feeling of entrepreneurship is prevalent among farmers, and Swiss agricultural policy is "part of a middle class policy, the goal of which is the preservation of a great many free entrepreneurs." Farm real estate credit is somewhat more developed, and the stability of land tenure greater than in the United States. Measures for the preservation of the farm population are thought of as being fundamental duties of the nation: "their goal is not to favor one class over others, but the maintaining of the

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\* This paper is part of a critical study on problems of farm-debtor relief legislation in Switzerland and the United States, with emphasis on the Great Plains. For valuable suggestions, I am greatly indebted to Mrs. Marjorie Hill Smythe, Brookings, S.D. Richard C. Young, Farm Credit Administration, Berkeley, California, was helpful in elucidating some of the knotty problems.

<sup>1</sup> Charles Warren, *Bankruptcy in U. S. History*, Harvard University Press, 1935, p. 9. See also hearings before a Senate Subcommittee on the Committee of the Judiciary on S. 25 and S. 25 (substitute), June 19, 1951, and July 17, 1951 (unpublished).



cornerstone of the Swiss community of people" because "it is nowhere easier than in the quietude of a village or farm yard to become a 'good man.'"<sup>2</sup> This philosophy—often voiced in this country—could be a part of the emotional philosophy of an industrial nation justifying its efforts to preserve a declining agriculture.

Interestingly enough, the Swiss *farm groups*, though they viewed agriculture as the cornerstone of a free enterprise economy, in turn blamed free enterprise for the difficulties besetting farmers. They stated repeatedly that its liberal principles—such as freedom to buy and sell landed property, to parcel it and to contract for debts—had unfavorable results like speculation, an unhealthy increase in the price level, and over-indebtedness. The *Report of the Swiss "Bauernsekretariat,"*<sup>3</sup> which preceded the preparation of the 1940 law charged that "*the general economic atmosphere of the 20th century, under the influence of commercial and industrial liberalism, commercialized agriculture and caused real property to become the object of trade of the capitalistic economy.*" This was cited as the prevailing reason for the over-indebtedness of Swiss agriculture.

To recognize the necessity for relief measures for distressed Swiss farmers was to admit the need for limiting the excesses of the private enterprise system and for reducing certain freedoms granted in the Constitution. Now the marketing of land and its inheritance have been seriously restricted, mainly at the request of the farm groups.

Discussions which for several years enlivened the Swiss parliament touched upon many questions which already have arisen or which are likely to arise in the United States.

#### *Summary of Developments in the United States*

*The Frazier-Lemke Act.* Section 75 of the U. S. Bankruptcy Laws, entitled "Agricultural Compositions and Extensions," which expired in 1949, is commonly referred to as the Frazier-Lemke Act. Actually only subsection (s) carried that name.

Under Section 75, subsections (a)-(r), passed in 1933, a farm owner in financial distress could propose to his creditors either an "extension" or a "composition" or both. An *extension* is an agreement between the debtor and his creditors under which the time within which the creditors' claims are to be paid in full is extended. A *composition* is an agreement for the payment of a percentage of the creditors' claims in full while the farmer is—in opposition to a regular bankruptcy procedure—permitted to retain his

<sup>2</sup> Ernst Laur, in an article entitled "Agricultural Policy," in "Handbuch der schweiz. Volkswirtschaft," Vol. I, pp. 184 ff., Bern (Switz.) 1939.

<sup>3</sup> The *Bauernsekretariat*, organized in the 1890's, is the administrative and research agency of the *Bauernverband*, an organization representing all farm organizations with the purpose of pursuing the economic interests of farmers.

farm if he makes the payments agreed upon. The original intent of Section 75 was to provide a special type of relief without subjecting farmers to foreclosure or to the stigma of bankruptcy, and to enable them to remain owners of their farms. A majority of the creditors, representing more than half of the total amount of claims, had to accept a proposal for composition or extension, before the agreement became valid. A composition thus amounts to a *scale-down* of the distressed farmer's original debts with the creditors' consent.

Subsection (s) of Section 75, the Frazier-Lemke Act added in 1934 and as amended in 1935, applied only after an extension or composition could not be agreed upon, or if the farmer felt that the agreement was unworkable or would prove to be a hardship to him. After amending his petition, he could ask to obtain a moratorium of three years, during which he stayed in possession of his farm under supervision of the court, if he paid a semi-annual rental. After three years, the law gave him the right to "acquire" his farm free of old encumbrances by paying to the creditors a sum equivalent to the farm's "then fair and equitable market value," as determined by appraisers appointed by the court. If this procedure resulted in a loss to creditors, it amounted to a "forced scale-down."

Section 75 was emergency legislation and was passed under the pressure of the severe distress in agriculture. It was criticized, even by its supporters,<sup>4</sup> for poor draftsmanship. But many loopholes were later filled by judicial decisions, particularly by the U. S. Supreme Court. Legal commentators appear to agree that addition of subsection (s) "put teeth" into Section 75 and was necessary to realize the original intent of the act, particularly when the majority consent of the creditors could not be obtained. Usually the only large debt of a farmer is a mortgage and the majority requirement gave a mortgage-holder the power to block a composition agreement. It also was pointed out that the threat of a procedure under subsection (s) acted in many cases as a stimulus for mortgagees to accept composition agreements.

*Recent Trends and Proposed Legislation.* Several bills have been proposed, in and outside Congress, during the past decade to incorporate all or part of Section 75 into a permanent Chapter 16 of the Bankruptcy Laws.

The following positions are taken with respect to these proposals:

- (1) There is need for legislation similar to Section 75, including the possibility of a scale-down under court supervision;
- (2) Legislation is advisable, but farmers should be given a moratorium only and the original debt should be left inviolate;

<sup>4</sup> See for instance A. Letzler, "Bankruptcy Reorganization for Farmers," *Columbia Law Review*, November, 1940, Vol. XL, No. 7, pp. 1133 ff. *Collier on Bankruptcy* is however not as strongly critical as other authors.

(3) There is no need for such legislation at the present time or ever.

(1) The main argument for *position one* is that farming is characterized by greater risks and uncertainties than other businesses. "The nature of risk in farm income" presents "credit problems peculiar to farmers" and justifies the extra protection to farmers afforded by relief legislation, including the possibility of a scale-down. "Delinquency in debt payments should not result in foreclosures, disruption of farming operation and dispossession of the farm family if the borrower is a competent operator. . . ."<sup>5</sup> The North Central Land Tenure Research Committee stated that "there will, of course, be cases where farmers are so over-burdened with debt that a scale-down settlement or foreclosure is the only solution." This committee advises, however, in favor of keeping composition or scale-down provisions separate from any moratorium law.<sup>6</sup> In recent hearings before a subcommittee of the Senate Committee on the Judiciary, Land Bank Commissioner J. R. Isleib took a stand in favor of provisions for "adjustment" (scale-down) of a farmer's indebtedness.<sup>7</sup>

Bill S.25 of the 82nd Congress—identical to S.938 of the 81st Congress, passed in the Senate but defeated in the House, and similar to legislation proposed in earlier years—represents this position. It is more detailed than Section 75. S.25 applies to both owners and tenants. If a farmer's petition is approved, three "competent and disinterested appraisers" evaluate his property at its "then fair and reasonable market value." Fair and reasonable installment payments to be paid by the debtor on the property's appraised value are fixed by the court which also determines the conditions of payment. For an immediate moratorium period of three years, the debtor keeps possession of his farm. Within the first two years of the moratorium, the debtor can offer a composition or extension agreement, or both, containing provisions "altering or modifying the rights of creditors" and the terms by which he proposes to satisfy them. The ensuing procedure depends upon whether all creditors do, or do not, accept the plan. If they do, the plan is confirmed. If they do not, the plan may still be

<sup>5</sup> R. Schickele, "Protect Farm Debtors against Unnecessary Foreclosures?," *Farm Policy Forum*, August 1950, pp. 16 ff. Other groups in the economy of course claim to suffer from similar handicaps. See A. D. H. Kaplan, who in *Small Business, Its Place and Problems*, implies that small business risk has a nature of its own: "The conservation of small business must be considered an important objective in the fashioning of a balanced, virile economy," (p. 6). "Small business faces many difficulties in obtaining credit, both long term and short term," (pp. 136 ff., p. 145).

<sup>6</sup> *Improving Land Credit Arrangements in the Midwest*, North Central Regional Publication No. 19, June, 1950, pp. 16 ff., 24-5. This suggestion does not however appear to be very realistic in the form in which it is stated.

<sup>7</sup> Special Senate hearings, *op. cit.* See also: "A Permanent Bankruptcy Chapter for Farmers; An Analysis of Legislative Proposals," *Yale Law Journal*, Vol. 56, No. 6, pp. 982 ff. (Editorial in favor of a permanent chapter for farmers).

confirmed under certain conditions.<sup>8</sup> However, the plan must appear to result in "the financial rehabilitation of the debtor."

As an alternative, the farmer may apply, before the expiration of the moratorium, for the "redemption" of the property. If he has paid one half of the appraised value into court, he may be granted an additional moratorium up to two years, within which time he shall pay the remaining debt. He then receives title to his property free of his old encumbrances.

(2) *Position two* is based on the reasoning that a scale-down is a violation of the original contract. It menaces our free enterprise system and tends to make debtors bad risks if they know that in financial distress they can reduce their indebtedness and therefore will ask for loans beyond the earning capacity of their property or their managerial ability. A law incorporating a scale-down such as S.25 will be unconstitutional and it will be mainly to the detriment of farmers themselves because investors will refrain from lending if such a bill is enacted into law.<sup>9</sup>

In support of the argument that a moratorium is an adequate form of relief for farmers in all cases, it has been stated that "a moratorium to be generally helpful at least should be co-extensive in time with the emergency." This realistic idea is incorporated in S. 25 in the *Nature of a Substitute*. Under this bill, which does not apply to tenants, the debtor must offer, in his petition, a "fair and reasonable rental" payment and the conditions of payment. If the petition is approved, the court calls a meeting of creditors. *The ensuing procedure depends on the decision of the court at that meeting on the cause of the farmer's distress.* The bill distinguishes between causes *beyond* the farmer's control (national or local emergencies) and causes *within* the farmer's control (bad habits, failure to attend to business, extravagant operations, and lack of farming ability). If the distress is due to the farmer's fault, the petition is dismissed. If the causes are beyond the farmer's control, a moratorium is granted for the duration of the emergency, without limiting the time period.<sup>10</sup> If there is no objection from the creditors, the rental offered by the farmer is approved; if there is, the court must determine the rental value. Every two years following the moratorium, the creditors may ask for a hearing to

<sup>8</sup> The particular provisions (Sections 988 and 990) are very poorly drafted and nearly incomprehensible. It is hoped that in the future, legislation affecting farmers is written in language easily understood by laymen.

<sup>9</sup> See statement prepared at the request of the Cooperative National Farm Loan Association in California, Nevada, Arizona and Utah, entitled "Situation Regarding Farmer-Debtor Bankruptcy Legislation," Federal Land Bank, Berkeley, California, March 1, 1951, mimeograph. See also E. Ferguson, "Shall We Have a Permanent Frazier-Lemke Law?," pamphlet of the Equitable Life Assurance Society of the U. S., New York, January 20, 1950.

<sup>10</sup> An amendment, suggested by the Equitable Life Assurance Society of the U. S., in the June, 1951, hearings, would limit the moratorium to a period of five years.

rediscuss whether the emergency has ceased. If a moratorium is to exceed four years, new hearings may be held at one year intervals. After the emergency has ended, the farmer may ask for a "time extension" and must then propose payment in full of his *secured* claims to be amortized within 10 years, or the original term of years, plus interest. For *unsecured* claims, he proposes payments that, in his opinion, he will be able to pay from future income.

Though the law does not permit a composition agreement, the "extension," as defined in the bill, may actually be like a composition, since the creditors' rights may be altered as to maturity, amortization, or interest rate of the original debts. Also the principle of the "inviolability of the original contract" is, more or less, adhered to only as far as secured debts, but not as far as unsecured debts are concerned.

S.25 (*Substitute*) attempts to eliminate the controversial appraisal procedure and the "forced scale-down." In the opinion of its supporters,<sup>11</sup> it provides a rapid, less costly procedure that will not endanger farm credit. By the same token, it side-steps the important problem of over-borrowing and over-lending, and of a downward adjustment of debts in certain cases. If the scale-down would really affect credit to farmers as lender-groups maintain, it should be determined more accurately whether it is the composition arrangement, the repurchasing privilege, or both, or some other feature, that will endanger credit. In this connection, it should be noted that subsection (s) of Section 75 was held unconstitutional in 1934 not because it violated the bankruptcy clause, but because it violated the Fifth Amendment. As amended in 1935, Section 75 was "well within the bankruptcy power and . . . its validity [is] now firmly established."<sup>12</sup> Also, bankruptcy is, by its very nature, a violation of the original contracts of the debtor.

(3) *Position three* argues that no legislation is needed: existing legislation, particularly Chapter 12 of the Bankruptcy Laws on "Real Property Arrangements by Persons other than Corporations" (which can now be applied to farmers after the expiration of Section 75) should amply protect farmers; we live in a period of prosperity and foreclosures are at a minimum; also Section 75 was not often used.<sup>13</sup> This position was originally strongly defended by the Equitable Life Assurance Society. The American Bankers Association expressed itself as being opposed to

<sup>11</sup> The Equitable Life Assurance Society of the U. S., and, partially, the American Bankers Association (See Hearings, op. cit.). The farm groups have as yet not taken a stand, but appear to support S.25 over S.25 (*Substitute*). See also *Equitable Farm Loan News*, August, 1951, pp. 3 ff.

<sup>12</sup> Collier on Bankruptcy, Vol. V, p. 124.

<sup>13</sup> To the contrary, see "Farmer Debtor Relief," in *Journal of the National Association of Referees in Bankruptcy*, Vol. XX, No. 3, April, 1946, p. 89.



any legislation for farmers, but if some was to be adopted, it favored S.25 (*Substitute*).

It is not quite clear why Chapter 12 of the act would be preferable to a bill like S.25. It embodies some of the features—such as a composition and appraisal—to which those that endorse position (2) or (3) are opposed. Specifically, if a farmer can propose a composition under Chapter 12, why would that not affect rural credit? If it is agreed that the preservation of the farm and farm home for the worthy farmer is a goal to be achieved, then Chapter 12 may not be adequate. It was not designed to meet the peculiar needs of farmers and its scheme which provides for an adjustment contingent upon the creditors' consent may be unsatisfactory.

*The Swiss Law of 1940 on the Liquidation of Debts on Farms and the Law of 1951 on the Preservation of Rural Enterprises.*<sup>14</sup>

In the 1920's and 1930's, farm foreclosures and bankruptcies became an alarming mass-phenomenon in Switzerland. The distress was so severe that in 1932, the federal government set up relief agencies on a nationwide basis. These agencies were unable, however, to cope with the problem in a satisfactory manner.

Financial difficulties in agriculture had long been attributed to transfers of land from owner to heirs at market values (60-70 per cent of all farm transfers);<sup>15</sup> high market values of land—a limited resource—resulting in the market value exceeding the land's value based on its earning capacity; high building costs; and the overloaning by banking institutions "more concerned with the problem of security of investment than the social good or the expediency of their investment." In the absence of nationwide, official statistics, agricultural assets and liabilities were estimated carefully in 1934 by the Swiss "Bauernsekretariat" on the basis of the organization's farm cost accounting activity. Total indebtedness amounted to approximately 50 per cent of the agricultural assets and about 90 per cent of the debts were secured by long-term liens on agricultural real estate. Ten per cent of all farms were estimated as being over-indebted as measured by their per-acre indebtedness and in relation to their income earning capacity. An additional 15 per cent were classed as heavily encumbered.

In 1940, the Swiss parliament passed legislation on farmer-debtor relief which, due to World War II, was not put into force until 1947. However, during the 1930's and the war, *provisional measures* were in force which contained many of the principles and features of the final legislation. Only the debt-liquidation procedure was first applied in 1947, for administrative reasons. In 1951 additional legislation was enacted.

<sup>14</sup> A translation of these laws may be obtained from the author.

<sup>15</sup> Usually the heir who takes over the farm must go into debt to pay off the co-heirs.

1. *The Law of 1940.* The Law of 1940 contained mainly the measures proposed by the farm groups.<sup>16</sup> Its purpose was to (1) reduce to a bearable degree the (mortgage secured) real estate indebtedness of agriculture for the individual farmer on the basis of individual liquidations of debts, and (2) to prevent future indebtedness through general measures applicable to agriculture as a whole.<sup>17</sup> The outstanding feature of this, as well as of the 1951 act is the attempt of the Swiss legislators to solve farm distress not as a separate problem, but within a broad framework of agricultural policy.

The discussions which lasted from 1936, when the bill was presented, till 1940, centered around some of the same problems which face United States legislators today. For instance, the bill was criticized for "endangering the debtor's character by overprotecting" him, i.e. for making him a greater lending risk, and for being detrimental to farm credit. The government pointed out that investors must be criticized just as sharply as borrowers for misjudging the economic situation and for mismanaging their capital. The main credit problem was how the *maximum limit of encumbrances*—which the bill provided to restrict "the liberty of farmers to get themselves into debt"—would affect farmers. Another related problem was whether the limitation of mortgage loans would not necessitate more credit not secured by mortgages, at reasonable interest rates, i.e. without increasing the latter. The government pointed out that two states had previously imposed such a limit and did not show excessive indebtedness and distress; and that it was aware that this limitation would, in some small manner, affect farm credit. In the future, the establishment of mortgages of a low rank should be subordinated to the general welfare instead of the profit motive of the investor. It believed that an excessive amount of debts, excluding mortgages, would not be as dangerous for the continued existence of the farmer as real estate indebtedness. A possible depression of the market value of the farms was held salutary in the long run and in the interest of the common good.

The large lending groups did not seem to deny the necessity for the proposed measures. In practice, the law did not further increase their lending risk, although it did narrow their future investment opportunities.

The final fate of the bill was not affected by objections that the law modified the fundamental principles of the civil law and was unconstitu-

<sup>16</sup> The so called "over-all" program of the 'Bauernsekretariat,' contained in its 1934 report.

<sup>17</sup> This was not the only possible solution which was discussed seriously. Others proposed to achieve the same end (a) by reducing the general indebtedness of agriculture through writing off of the total debt by a certain amount at the total expense of the creditors, or (b) by the federal government and the states taking over that part of the debts which exceeded the appraised value of agricultural property and the subsequent creation of state mortgages, or (c) through a capital tax.

tional, and that it was too complicated and poor legislation because it combined temporary with permanent provisions.

Serious criticism was voiced against the liquidation procedure as shocking the farmers' sense of freedom and privacy. But the opinion prevailed that not the feelings of those immediately concerned, but purely objective criteria should be decisive, and that this was a piece of far-sighted economic policy which attempted "*to detach the agricultural enterprise from the capitalistic economy which is fundamentally foreign to it.*"

2. *Content of the Law of 1940.* In order to prevent future indebtedness and to relieve existing distress, the Law of 1940 provides for (a) a limit to encumbrances, (b) a change in the inheritance laws, (c) and a restriction in the transfers of agricultural real estate. These provisions are applicable to all farmers and are permanent legislation. (d) The debt liquidation procedure applies only to farmers in distress; the provisions regulating it expire in December, 1952, five years after the act went into effect.

In all cases, the appraisal of the land, at the owners' cost, by a state appointed appraiser, is of *fundamental* importance.<sup>18</sup> Rural estates are appraised mainly on the basis of their long-run income earning capacity in order to enable the farmer to pay the interest and service his mortgage from the proceeds of his farm. This value must be the capital value for which an enterprise over a "fairly long period" (usually 30 years) has assured its owner, under ordinary conditions, a revenue which corresponds to an average interest rate of four per cent. To take into account the personal circumstances of the case—the owner, the size of his family, condition of buildings etc.—not more than 25 per cent of the appraised value may be added.

a. *Limit to Encumbrances.* All rural property can only be encumbered with new mortgages to the extent of the appraised value established in conformity with the statute.

b. *Inheritance Law.* A farm enterprise forming an economic unit and offering sufficient means of existence must be transferred in its entirety to the heir who requests it and who appears capable of managing the enterprise, at a price based on the normal income earning capacity. If one of the co-heirs objects, or several heirs could take over the farm, the court decides upon the partition.<sup>19</sup> If a farm is transferred to an heir at

<sup>18</sup> A reappraisal may be requested after intervals of five years. It is compulsory if the value of the estate is affected by constructions, improvements, or the forces of nature.

<sup>19</sup> The provision does not apply if all heirs are in agreement to divide the farm in a different manner or to give the farm to one heir at, say, the market value, or if the farm is given to one heir during the lifetime of the owner. Originally the law was to be compulsory in all cases. As it stands, parcellisation of the land and over-indebtedness of heirs may not be prevented in many cases.

a price below the market value, and sold within 15 years at a higher price, the co-heirs can request a share in the gain.

c. *Transfer of Farm Real Estate.* A farm cannot be sold whole or in parcels within six years following the purchase. States are permitted to make exceptions to the rule. The Law of 1951 increased the time limit to 10 years.

d. *The Debt Liquidation Procedure.* The liquidation of debts on farms is a modified bankruptcy procedure and applies only *when the mortgage indebtedness exceeds the appraisal value of the farmer's real estate property*, i.e. to "uncovered" mortgages. The end result should be the permanent consolidation of the enterprise and the adjustment of the real estate indebtedness to a "normal" situation. A liquidation can take place only (1) in a state which has established a Sinking Fund and passed the necessary rules and regulations to administer the law; (2) if the farm constitutes the material means of existence of the farmer and his family; (3) if the farmer is unable to pay the interest on the mortgage-secured debts; (4) if he is not responsible for his distress, is worthy of assistance and capable of adequately managing his farm; and (5) in case the farm is rented out, if the rentals are the owner's means of existence. As a general rule, the farm must have been in the farmer's, or his family's possession prior to 1932. Besides reducing uncovered mortgages, delinquent interests, and the interest rates on *covered* mortgages can be scaled down and a time extension of up to eight years (four years on chattel mortgages) granted. Current unsecured debts must be liquidated through the payment of a dividend.

For *uncovered* mortgage claims which exceed 200 per cent of the appraised value of the farm, the creditors receive only a bankruptcy dividend. This severe loss is justified because of what the legislators called the "social undesirability of the investment." Creditors with claims lying between 100 per cent and 200 per cent<sup>20</sup> of the appraisal value receive state-guaranteed, negotiable and four per cent-interest-bearing bonds, redeemable in 20 years, for part of their claims. The remainder constitutes the creditors' loss, but their loss increases as the claims approach the 200 per cent limit. The relationship between these creditors and the farmer ceases, and two new contracts arise: (1) between the creditor (bondholder) and the state and (2) between the farmer and the state, because he must now make annuity payments to the state for 20 years. These payments are matched by the state to redeem the bonds. If his situation is critical, the farmer may be relieved entirely of his payments.

<sup>20</sup> The purpose of this rigid classification was to exclude further considerations of the market value in the liquidation procedure.

The state obtains in turn a "collective," non-interest bearing mortgage on the farmer's property. The state's funds to carry out this procedure are derived from relatively large contributions by the Confederacy and the state.

Thus the liquidation is a *forced amortization* or *scale-down*; a *subsidy* inasmuch as the nation participates in reducing the creditors' losses; an *intermediate* solution because the creditors obtain government bonds in place of an uncertain claim against the distressed farmer, and the latter stays on his farm; and it is *limited* in time and scope. The procedure is accompanied by some publicity. The farmer's freedom of action is greatly restricted for the period during which he pays annuities—he cannot for instance, sell the property without consent of the state's Sinking Fund—and he must keep proper accounts and endure the supervision of a farm management expert.

3. *The Law of 1951.* In 1951, parliament passed the *Law on the Preservation of Farm Enterprises*. It stipulates that if possible the agricultural areas of Switzerland should be preserved as such. A reduction of farm land should be offset either by taking new land into use, or through payments for the improvement of existing farm land. If a farm is to be sold, relatives, tenants, and even hired men have a preemption right, and the farm price will be based on the appraisal value as previously explained. The states may oppose a sale if the purchaser's intention is to speculate, if he already has enough land, or if the sale will cripple the enterprise as an economic entity. Rental agreements must be concluded for not less than three years in duration and excessive rentals may be reduced.

Finally, the law again attempts to protect farmers against "uneconomical forced sales" because efforts to make the existence of the farmers more secure cannot prevent cases where individual farmers may be in distress as a result of bad luck or other reasons beyond their control. A composition arrangement<sup>21</sup> is now available to the distressed farmer, consisting of a moratorium of up to four years, a limitation of the rate of interest to four per cent for covered, or a reduction or cancellation of interests on uncovered claims. The supervision of the farmer by a management expert may be recommended. These provisions are not as far-reaching as those of the law of 1940 because it was believed that the farmers whose mortgage debts greatly exceeded the long-run appraised value of their farm would have taken advantage of the unique readjustment procedure available to them until 1952. As far as the bankruptcy provisions alone are concerned, the act of 1951 resembles the U. S. Bill S.25 (*Substitute*).

4. *Application of the Law of 1940 Since 1947.* Though the law of 1940 did

<sup>21</sup> A similar procedure was used in the formerly heavily indebted Swiss hotel industry which presented similar problems.



not go into effect until after the war, provisional legislation containing its more important measures, such as the limit to encumbrances, resale restrictions, protective measures for tenants, had been in force since the late 1930's.<sup>22</sup> These general provisions no doubt have contributed to a healthier agriculture.

In contrast, the liquidation procedure for distressed farmers was applied for the first time in 1947. By 1951, only a few states had set up the necessary agencies to implement it. Only a few petitions were filed. Causes for the failure of more general application of this part of the law may be found mainly in the unforeseen general improvement in agriculture. The average rate of interest on mortgages decreased without resulting in *substantial* new indebtedness, as in the first World War, though the total mortgage indebtedness actually increased somewhat.

Nevertheless, the procedure could have been applied in many cases to good advantage. It has been stated that many farms remain very sensitive to a potential crisis because the farmers' possibility of withstanding the pressure of an excessive debt-burden out of their own resources is in general over-estimated. Though there are few petitions under the statute, farm relief organizations are still quite active which shows the existence of distress cases. Even if individual farmers do not gain from prosperity, it affects their psychological attitude and their outlook upon the future. If they have alternative employment opportunities or the hope that prosperity will eventually affect them, farmers will not prefer the debt liquidation with its complicated and public procedure, but will choose either to sell their farms or try to "string along."

### Conclusions

We are now facing in the United States the question whether, and how much, legislation for the protection of the farm section of our population is warranted. This is not easy to answer, because the problem involves many purely economic, as well as social and political, considerations.

From an economic view point, farm foreclosures or bankruptcies are occurrences, which, in a dynamic economy presumably permit a reallocation of resources in agriculture. They permit, for instance, the elimination of inefficient farmers or those on inefficient units. They may be accompanied by a shift in the distribution of wealth such as a greater concentration of farm land in the hands of fewer landowners; or bankrupt farm-owners may become tenants. But these are not necessarily uneconomic shifts. If bankruptcies should cause a net movement out of agricultural into non-agricultural industries, this may reduce the under-

<sup>22</sup> One war measure (1940) made the transfer of a farm subject to an official authorization. The Statute of 1951 does not go quite that far, but permits the opposition to a sale by a state *ex officio* in certain cases.

employment of which certain phases of agriculture suffer. If the effect of farm-debtor relief legislation would be to reduce the mobility of resources thought to be essential in a progressive economy, the measure would be objectionable under that criterion.

But if we focus our attention on the problem of "involuntary" mobility in periods of agricultural or general depressions, when resources are not allocated satisfactorily, the answer would be different. In a *general* depression, the swelling of the ranks of the unemployed or those on relief must be prevented. In that sense, relief legislation for farmers becomes a form of unemployment relief by keeping farmers employed. In an *agricultural* depression, such as in the 1920's, it might enable farmers to remain on their land if they so desire (even though they might find alternative employments) and thus it takes cognizance of some immobility—without increasing it—which is as inherent in the economy as its mobility.

Considering social or political values, we are, like the Swiss, of the opinion that the family-farm ownership pattern is a valuable, integral part of our society. If we want to preserve it, we have to minimize the losses which a dynamic society inflicts on it. This can only be done by increasing the stability of agriculture.

In contrast to our stop-gap efforts, the Swiss viewed the problems throughout depression and prosperity from the long-run and over-all point of view. Therefore, some of the features of the Swiss laws should be worthy of our consideration. The appraisal of a farm on the basis of its long-run income earning capacity, for instance, seems a more realistic approach than the market-value appraisal of our legislation. The inclusion of tenants in our legislation also should be seriously considered because of the lack of stability of their tenure.

In Switzerland, the restriction of credit, as a result of the limit to encumbrances, was not considered undesirable. If we keep stability in mind, the Swiss arguments for restriction of credit should have value to us. They contend that restriction of credit has a deflationary effect; reduces land values, and thereby prevent recurrences of mass foreclosures; and that it would result in a more careful selection of risks by the lenders and the avoidance of "socially undesirable investments."

The restriction of credit is forecast in the U.S. for other reasons. But if relief laws could prevent land values from again rising as far above their long-run income earning values as they have in the past, a bill such as S.25 would have a counter-cyclical effect and the restriction of credit could be salutary. Such a bill, however, may have no such effect on credit since it does not involve radical changes in our basic institutions.

It might appear as if the Swiss laws greatly modify that nation's

capitalistic economy. They have abandoned partially the principle of *ownership in fee simple* by dropping some of the rights in the "bundle" through increased control of the marketing of land, and changes in the inheritance laws. In reality, the new measures are attempts at strengthening private ownership by reducing the risks facing the small entrepreneur, and thus, by giving up some of the freedoms, they reinforce the basic ownership pattern. Mass foreclosures and bankruptcies with their effect on unemployment and in general on our economic, legal, and social institutions, could be considered typical of those factors about which Schumpeter has said takes "the life out of the idea of property" and creates that "critical frame of mind which after having destroyed the moral authority of so many other institutions, in the end turns against [capitalism itself]."<sup>23</sup>

Under certain conditions it might be necessary to choose between the principle of the unrestricted flow of resources with its ensuing risks for the individual small entrepreneur, or to relinquish some of the economic freedoms for the purpose of maintaining other values, such as stability and economic security which also are desirable in any economy.

<sup>23</sup> J. A. Schumpeter, *Capitalism, Socialism and Democracy*, pp. 142, 143.

## THE USE OF THE COMMODITY EXCHANGES BY THE IOWA GRAIN INDUSTRY\*

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ORGANIZED commodity exchanges have existed in this country since shortly after the Civil War.<sup>1</sup> They developed as a logical step in the growth of a complex, mass producing agricultural economy.

Commodity exchanges, though they have been widely criticized for causing high consumer prices and at other times for causing low prices to producers, offer many valuable economic services to the grain industry. Perhaps the most important is that of providing facilities to hedge in the futures market, thus giving price insurance on grain inventories or forward sales by allowing members of the grain industry to shift market risks to others. But not to be overlooked are the many other services, such as providing: (1) detailed and reliable information on present and anticipated market conditions; (2) current and futures grain price information; (3) a market place where buyers and sellers of commodities can meet to buy and sell cash grain; (4) a constant everyday market for producers' grains, and (5) low-cost distribution of the nation's grain supply.

Although commodity exchanges do provide these various services, little has been written on their actual use by the members of the grain industry. It was the purpose of this study to discover the role of commodity exchanges in grain marketing through an objective analysis of the use of the services provided by the commodity exchanges of the grain industry of Iowa. Another purpose of this research was to analyze the attitudes of these grain middlemen toward the functions of the futures market.

Two questionnaires, essentially similar in make-up, were used in this research project. One was sent to country elevator operators, the other to grain processors in Iowa. The elevators were further separated into three ownership groups—-independent, cooperative, and line. Recipients of the questionnaires were selected on a systematic random basis.<sup>2</sup>

Of 275 questionnaires sent out, 110, or 40 per cent, were returned. This return represents a five per cent sample of the total number of elevator

\* This is a condensation of an M.A. thesis at the State University of Iowa and of the paper which received the first place award in the graduate division of the 1951 Uhlmann Awards Contest of the Chicago Board of Trade. (Editor's note)

<sup>1</sup> Julius B. Baer and Olin G. Saxon, *Commodity Exchanges and Futures Trading*, 1949, p. x.

<sup>2</sup> According to Myron S. Heidingsfield and Albert B. Blankenship, authors of the book, *Market and Marketing Analysis*, 1948, systematic random sampling is "a method of sampling which chooses the elements of the sample through the use of some fixed interval. For example, the choice of every fifth card in a file."

operators and processors in Iowa. Although the survey has certain limitations, the findings do point out significant attitudes toward, and uses of services of, the commodity exchanges.

This paper will deal with the following topics: policies in handling grain purchases; factors used for price determination; the extent of hedging; reasons for hedging; reasons for not hedging; and the effect of the absence of a futures market on the individual firm.

### *Grain Handling Policies*

The policy used by the elevator operator and processor in handling purchases relative to sales of finished goods or grain largely determines the necessity for hedging. That is, how long is the grain held—is it sold at once or stored; and are there forward sales of finished goods or not.

Results showed that the independent, cooperative, and line elevators of Iowa tended to sell their grain purchases immediately. No one of this group followed the general policy of storing grain to be sold at a later date. It is interesting to note that most of the elevator operators who sold grain purchases immediately also practiced hedging. However, this is not to say that they were necessarily hedging these immediate sales, but probably hedged the relatively small amount of grain which was held for longer periods. The data do not reveal how many bushels this was, but do show that only 10 to 20 per cent of the total purchases of the elevator operators were hedged. Although most elevator operators sold grain purchases immediately, the few who held them in storage and did not hedge were without protection against a possible decline in price. Actually, they were speculating in the cash grain market; hoping that prices would rise to yield an additional merchandising profit.

Thirty-six per cent of the respondent processors followed the policy of "buying grain for storage to be later manufactured and sold as finished goods;" 23 per cent handled most of their grain through the policy of "buying grain for storage, immediately contracting to sell manufactured goods;" and 13 per cent bought grain only as needed. Facts tend to indicate that a number of processors held grain inventories without protection against a change in price. For only 54 per cent of the processors who stored grain for later processing stated that they had hedged some of this stored grain.

Eighty-six per cent of the processors who followed the policy of balancing grain inventories with contracts for finished commodities also had hedged. These processors, however, need not hedge, for when purchases are covered by immediate sales contracts for finished goods, no risk of a price change exists. But the fact that many of these processors did hedge indicates that they did not always cover grain purchases by



finished goods contracts, but at times followed a policy which required at least some hedging for protection.

### *Factors Used For Price Determination*

Even though elevator operators and processors do not actively use the hedging facilities of the commodity exchanges, they may use other services available, such as the registering of current and futures grain prices. Survey results show considerable use of the "price of grain at Chicago" by grain middlemen as a basis for their grain bids to country stations and producers.

Data represented in Chart I shows that 26 per cent of the elevator operators considered the "Chicago cash grain price less freight to Chicago" as the most important factor in determining their prices for grain, while 27 per cent stated that they based prices on "over-night bids" from purchasers. (Over-night bids are bids sent after the close of the market to the country elevator for grain wanted on a particular business day at a designated price. For example, a processor may tell the elevator

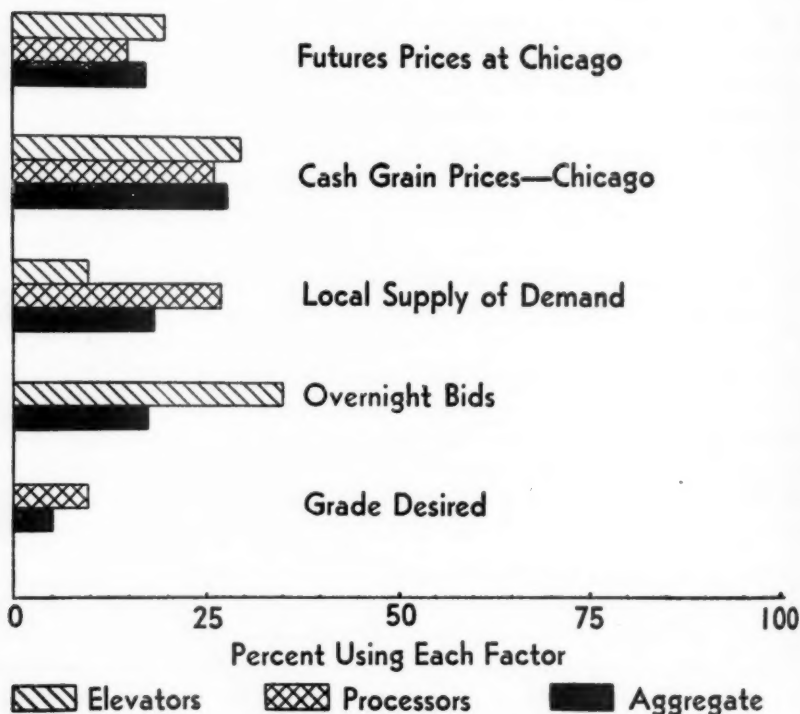


CHART I. THE IMPORTANCE OF VARIOUS FACTORS USED BY IOWA ELEVATOR OWNERS AND PROCESSES AS A BASIS FOR GRAIN BIDS

operator that tomorrow he will pay \$1.70 a bushel for corn to be shipped and received within 10 days.)

Iowa processors tended to base prices equally on local supply and demand and "cash grain prices in Chicago." (Chart I). For smaller processors operating on a local basis, however, local supply and demand of grain was generally the most important factor in determining prices. Large processors based grain bids on the cash and futures prices at Chicago, and on local grain supply and demand conditions with a consideration of the grade desired.

### *The Extent of Hedging*

One of the most important questions in the study asked the elevator operators and processors, "Do you hedge?"

The answers indicated that 51 per cent of the independent elevator operators in Iowa have hedged grain purchases (Chart II). However, close inspection reveals that the size of the firm determined to a large degree the practice of hedging. For 63 per cent of the independent elevator operators identified as large had hedged, while 42 per cent of the

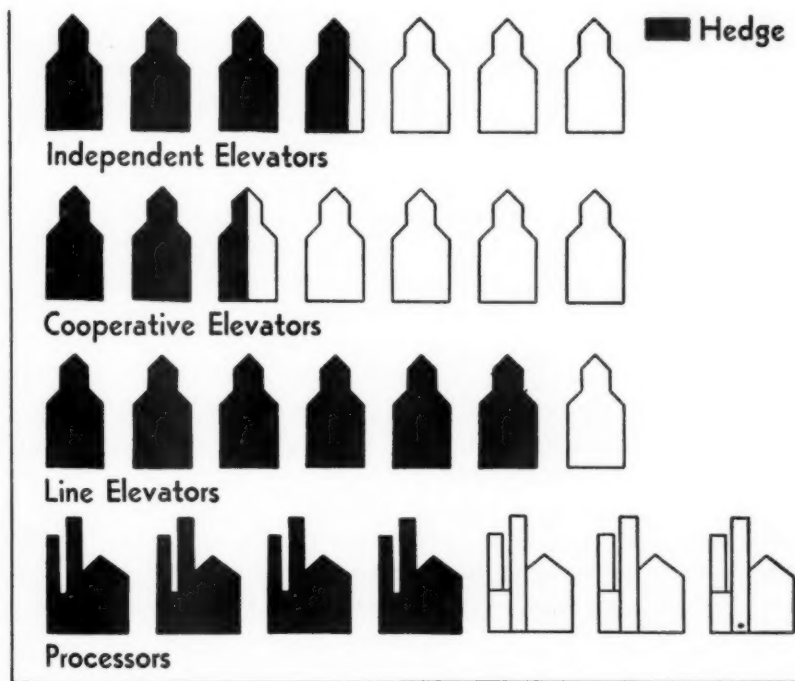


CHART II. THE EXTENT OF HEDGING IN THE IOWA GRAIN INDUSTRY

small operators hedged.<sup>3</sup> However, 80 per cent of the independent elevator operators who hedged had done so on less than 25 per cent of their grain purchases.

Only 36 per cent of the cooperative elevator operators hedged some grain purchases, while six out of seven line elevator operators had done so on occasion (Chart II). However, findings do not reveal what portion of the grain these figures represent.

Data further show that four out of seven grain processors hedged some of their grain purchases (Chart II). Here, it was desirable to classify the data on the basis of size of the processor according to number of bushels of grain purchased in 1949.<sup>4</sup> This break-down reveals that 93 per cent of the large processors hedged, while only 25 per cent of the small processors did so. Although facts do not show what portion of grain the processor had hedged, it does show that all processors who purchased more than 400,000 bushels of grain in 1949 hedged regularly.

It becomes evident that the very large firms, elevators, and processors feel a definite need for protection against adverse price changes. A processor sums up the feeling of the large processors as follows:

"Because of our large volume of manufactured products we must, of course, carry fairly heavy inventories at all times in order to insure the continuous operation of our mills. Without the price protection afforded by the commodity markets, we could on a declining market lose in a short time the profits for an entire year."

### *Reasons for Hedging*

Many people believe that hedging is gambling and has no other purpose. But this study reveals that the primary reason elevator operators and grain processors in Iowa hedged was to minimize risks, that is, to protect grain inventories and short sales of finished goods against price changes. Since prices in the grain industry tend to fluctuate violently, the risk involved in carrying grain for any length of time is very great. A small drop in price may wipe out the grain man's entire profit. However, a small rise in price may yield a larger return, but the hedger surrenders the possibility of making a speculative gain for the partial protection against a possible loss.

A secondary purpose of hedging, as stated by these members of the grain industry, was to earn a carrying charge. This is possible when the spread between cash and futures prices is greater than the cost of storing grain. That is, when the prices in more distant futures months are said

<sup>3</sup> Large firms include those who purchased 150,000 or more bushels of grain in 1949; a small elevator is one that handled less than 150,000 bushels.

<sup>4</sup> A large processor is one who bought 200,000 or more bushels of grain, while a small one bought less than 200,000.

to be at a premium over the near futures, the hedger can earn an additional merchandising profit by storing grain and hedging it in the more distant futures month. A final reason for hedging, as reported by many elevator operators and processors, was that it is easier to get financial assistance from banks with hedged grain inventories as collateral.

### *Reasons for Not Hedging*

The primary reasons advanced by elevator operators and grain processors as to why they do not hedge was because their volume of business was too small, or they were able to obtain the same protection through the immediate sale of grain or finished commodities. The processor who produces to a local demand can plan his operations so that he will not have a large inventory of grain or finished goods; hence, he has no need for hedging. The survey results show that many elevator operators and processors do not understand the functions of the futures market nor possess the knowledge of how to use them. A further reason for non-use of the hedging opportunity by the cooperative elevators results from the fact that the boards of directors, who are farmer producers, forbid the use of hedging.

### *Effect of the Absence of a Futures Market*

Since many elevator operators and processors do not hedge, it was necessary to discover attitudes of the elevators and processors towards the role of the commodity exchanges to better determine the full significance of these exchanges in the marketing of grain. Elevator operators and processors were asked, "Would the absence of a futures market affect your firm?" Answers show that 71 per cent of the independent elevator operators believed that the absence of the futures market would affect them. However, the size of the firm tends to influence the answers significantly, for 73 per cent of the large operators answered "yes," while only 65 per cent of the small answered in the affirmative.

Fifty-eight per cent of the responding cooperative elevator operators believed that the absence of a futures market would affect them, and 25 per cent did not know if it would or would not. However, 86 per cent of the line elevator operators felt that they would be affected if there were no futures market.

Country elevator operators who believed that they would be affected if there were no futures market said that without the futures markets risks of price fluctuations would be greater, the market would become unstable or less stable, operating margins would have to be increased, and elevator men would have no basis for cash grain bids. In effect, they

agreed that without the futures market the price the producer receives would tend to be lower because of the increased risk to the elevator operator, and because of the uneven supply of, and demand for, grain being marketed. At harvest time the supply of grain in the market would far exceed the demand, while at other seasons the demand would exceed the supply. In other words, a buyer and a seller would not always be in the market at the same time. These elevator operators believe that someone must carry the risk involved in price fluctuations. If the elevator operator does, then he must increase his operating margin so as to absorb a resultant loss if prices should change to adversely affect him. It is the futures market that provides facilities for shifting this risk to others.

The survey shows that 63 per cent of all processors responding thought that their companies would be affected if there were no futures market. But when size of the firm is considered, 93 per cent of the large processors believed that the absence of the futures market would affect them, while 37 per cent of the small processors thought they would be affected. Generally, processors felt that if there were no futures market the risk of loss due to price fluctuations would be greater, thus necessitating an increase in the spread between the buying price of grain and the selling price of finished commodities. Finally, processors stated that they could only carry a minimum inventory, or they would have to take a speculative inventory position to assure a supply of grain.

Even though many do not hedge, elevator operators and processors generally felt that the futures markets and commodity exchanges play a valuable role in the marketing of grain.

### *Summary and Conclusions*

The results from this study reveal that a large number of the elevator operators and processors in the Iowa grain industry do use the facilities and services of the commodity exchanges. Furthermore, many of them believe that the futures market and the commodity exchanges are important in the marketing of grain.

About 54 per cent of the respondents of the survey use the futures market for hedging. They hedge to protect their inventories against violent price fluctuations. Besides providing hedging opportunities, the commodity exchanges gather and publish detailed information about grain supply and demand conditions. These conditions are registered in the exchange through the prices on cash grain and on futures contracts. Futures prices register anticipated supply and demand of grain while cash prices show present supply and demand. Thus, the grain man can, to a degree, plan business operations by watching the cash and futures prices, and the trend of these prices. Elevator operators and processors



use the cash grain and futures prices in determining their own price for grain.

Without the futures market, the respondents believed, the market for grain would be less stable than it is now and price movements would be very erratic, barring complete government control. Conceivably the supply and demand might be so erratic that there would be neither buyers nor sellers in the market. The respondents, therefore, felt that one of the main services provided by the commodity exchanges is that of providing a liquid and stable market.

A member of the Iowa grain industry thus summarizes the role of the futures market:

"Due to the variation in period of production, or rather harvest, and the period of consumption, someone must accept the risk of ownership for large stocks of these commodities from date of production to date of consumption. The grain futures markets provide a means of transferring this risk of ownership from the producer, the processor, the dealer, and the warehouseman to others who accept that risk as a legitimate business transaction. Since this means does exist, it allows the producer, processor, warehouseman, et al., to devote their time and energy entirely to their main activity, and it allows them to avoid the necessity of increasing the margin between producer and consumer since they need not include as part of their cost any premium for price risk insurance."

## NOTES

### A FRAMEWORK FOR LAND ECONOMICS—A COMMENTARY

PROFESSOR SCHULTZ has performed a worthy service to the field of land economics with his article in the previous May issue of *This Journal*. For those who teach principles of land utilization, his exposition is a welcome addition to their very limited list of readings on the poor allocation of the factors of agricultural production.

But Schultz probably has swung the pendulum too far away from the land factor when he places the blame almost entirely on the capital and labor markets operating within the framework of the economic aspects of location. Land must share the responsibility for the unequal rewards for human efforts expended in agricultural production in different geographic areas. Indeed, in some of the most commonplace examples of this unfavorable proportioning of production factors, land must carry the major responsibility for unequal development of agriculture.

Over large areas, such as our national type-of-farming regions, the conditions set forth by Schultz undoubtedly exist to a considerable degree. It is probable that the capital market is largely responsible for the inequities observed while the labor market plays the role of a supporting villain. To the writer, who has some training in soil science, the remarkable feature is that human effort in agriculture, on the average and with certain outstanding exceptions, returns nearly comparable rewards in the several type-of-farming regions. In general, farmers have been rather successful in selecting enterprises to suit the resources, physical and economic. As Schultz points out, there are exceptions to this generalization. Viewed in this broad perspective, one might agree with Schultz that land shares less responsibility than other factors for the unequal rewards. But another situation exists when one considers those farms located within each type-of-farming region, whether state or national in scope.

Turn now to a given type-of-farming region wherein the organization of individual farms follows a rather uniform pattern. Numerous studies have shown that returns to human efforts in agriculture display a wide variation from farm to farm. More important is the fact that generally a spatial distribution pattern is noted and may be mapped. Schultz quotes Johnson of Kentucky to illustrate this phenomenon. Why does this situation of low income areas continue to exist? Johnson postulates "that they have never had land capable of producing a surplus above subsistence for reinvestment in such facilities." Fundamentally, these farmers in low income areas have failed to select farm enterprises that are well adapted to their agricultural resources. Over large areas, the capital and

labor market may be largely at fault, but within this more restricted spatial limits, the land factor plays a major role. "Land" is used here to include the soil and its physical environment, particularly climate and topography.

How do land characteristics in a low income area restrict the selection of enterprises that are more intensive than those commonly in use throughout the type-of-farming region? Most of the intensive enterprises, and all of those dependent upon home-grown crops, require higher rates of production than the less intensive enterprises. In most cases areas of low income have land with a lower capacity and usually a lower efficiency. This results in lower rates of production, which points to less intensive rather than more intensive enterprises. In those infrequent cases of low income areas in which the land has a capacity and efficiency comparable to nearby higher income areas, the writer will agree with Schultz that the land factor is not primarily responsible for the malallocation of factors. Nevertheless, the land has a large measure of responsibility in dictating the supposition Schultz uses to illustrate a technical circumstance in which the ratio of land to labor is fixed.

How do the attributes of the land restrict farmers from selecting enterprises that are less intensive than normal for the region? Schultz says such a situation does not exist; a thesis with which this author cannot agree. Further, Schultz states that if it did exist, the land should be abandoned. Although this may be acceptable in theory, it is loaded with practical difficulties.

#### *Land May Limit Extensification*

Land may limit extensification in several ways. In some areas, mechanization for a less intensive enterprise is not physically possible due to topography or weather. Seasonal time schedules may not be met due to wet land, heavy soil, slow speed of operations, or drouthiness. These factors frequently result in lower yields, idle land, or a poorer selection of crops. Specialized, expensive equipment may be required to perform operations on land that has adverse characteristics, whereas in competing areas standard equipment is satisfactory. (The productive use of machinery in some disadvantaged areas is so low as to make its use impractical even if capital is available for its purchase.) The feeding period may be longer and/or more expensive than in competing areas. Some areas are unable to extensify because the insect, pest, or disease problem would be untenable. Soil or climatic conditions may result in a lower quality product than is produced elsewhere.

Additional items might be added to this list to cover certain localized conditions. The reasons cited should explain why the addition of capital

and/or labor and management will not and, in some instances, has not made it possible for farmers in low income areas to select more extensive enterprises in an effort to utilize their agricultural resources better. Availability of capital and labor *per se* will not, in most areas within a type-of-farming region, solve the problem of low rewards for human effort in agriculture. As technology advances, there will be a decrease in the number of areas where land is the limiting factor in the selection of the most profitable enterprises. Normally, technological advances foster intensification rather than extensification and tend to keep disadvantaged areas at low income levels—usually relatively lower than before the adoption of the new techniques. Of course, to the extent that new developments cause supply to increase faster than effective demand, some areas are abandoned; a special case of extensification that occurs within type-of-farming areas. Even as a long-time goal, abandonment has sociological problems that are more complex than those of strictly an economic nature.

#### *Location as a Factor*

Schultz presents an interesting hypothesis regarding the importance of location in agricultural production. It seems advisable to point out that the advantages, or disadvantages, of location will not be realized with any degree of completeness unless the individual farmers are able to change their enterprises in accordance with the modification of the location factor. Almost within sight of the Empire State Building, for example, are groups of low income dairy farmers who have not been successful in either intensifying or extensifying their enterprises, largely as a result of the physical characteristics of the land. The advantages of location and technological improvements have largely by-passed such groups, leaving them relatively poorer than were their grandparents.

Additional empirical proof is necessary to win the point that, within a type-of-farming region, the managerial capacity is not at a lower average level among farmers in the low income areas than in the areas of higher incomes.

It seems premature to absolve any of the production factors from the guilt of inequality of rewards for human effort expended in agriculture. Unless the case is confined to a specified area, certainly land must share that guilt with capital and labor. The counsel of competent farm managers is needed as assurance that the correct verdict will be reached.

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## LIVESTOCK MARKET LOCATION THEORY

MOST of the previous studies of marketing methods and institutions have centered attention on the markets available or used, with a discussion of relative advantage, disadvantage, costs, prices, and similar items.

It should be possible to ascertain the type of market to be found in an area by analyzing certain factors. This paper will consider some of these factors, but it is intended only as a preliminary report to encourage further study in this area of livestock marketing.

Studies have been made of factors which affect the location of industry<sup>1</sup> and which determine the nature and extent of division of retail trade between competitive towns.<sup>2</sup> There should be a basis on which to determine the types of livestock market farmers will use.

To determine a general location theory, Abbenhaus included such factors as technology, population, changes in raw materials, governmental influences, pricing system, changes in tastes, and economic fluctuations.

Reilly found that the proportion of trade going to various urban centers varied directly with population of the centers and inversely with the square of the distance in miles. He also considered 11 other factors. Converse made several studies checking the validity of Reilly's law of retail gravitation under Illinois conditions.

In the short run, the types of markets available will determine how livestock is marketed. In the long run, there will be changes in available marketing institutions to provide those services for which the seller is willing to pay.

Habit is a factor in marketing although this can be changed over a period of time. This is evidenced by the changes in amount of purchases of livestock slaughtered in federally inspected plants through terminal markets. In 1925, 90.7 per cent of the cattle, 87.1 per cent of the calves, 76.0 per cent of the hogs, and 82.3 per cent of the sheep were purchased at terminal markets. In 1950, the corresponding figures were 74.9 per cent of the cattle, 56.7 per cent of the calves, 39.9 per cent of the hogs, and 57.4 per cent of the sheep.

Distance to a market has always been considered important in the choice of a market. Local markets tend to draw most of their volume

<sup>1</sup>G. R. Abbenhaus, *Locational Changes in the Food Processing Industries Between 1939 and 1947*, Doctoral Dissertation, University of Illinois, 1951. E. M. Hoover, *The Location of Economic Activity*, McGraw-Hill Book Company, Incorporated, New York, 1948.

<sup>2</sup>P. D. Converse, *A Study of Retail Trade Areas in East-Central Illinois*, Bureau of Economics and Business Research, University of Illinois, College of Commerce and Business Administration Studies, No. 2, 1943. William J. Reilly, *Law of Retail Gravitation*, William J. Reilly, New York, 1931.



from a radius of 25 or 30 miles.<sup>3</sup> Terminal markets "pull" livestock from greater distances than local markets. But over the years, terminal markets have obtained an increasingly larger portion of their livestock from the nearby areas. Other large terminal markets and local markets have developed to absorb the more distant volume.

If livestock volume is too small to support a market, then no profitable market operation can exist, even if the market handles all available livestock. However, there are cases where the organization of an efficient market in such areas has encouraged production to the point where a market could afford to operate.

In addition, some external factors are important. For example, at one time the Omaha hog price was approximately the Chicago price less transportation costs. A large portion of the pork then moved east. But in more recent years, the Omaha price is often nearly as high, and occasionally even higher, than the Chicago price. This is caused by the population increase in the West Coast area and the need to move more pork west. Theoretically, market channels would change because western Illinois buyers with California orders could pay more for the same hogs than Chicago buyers.

Closely related to population shifts are shifts in location of packing plants. When most of the packing plants were located at or near the large terminal markets, most of the livestock moved through such markets. But as old plants were replaced by new ones, there was a tendency to build nearer the areas of production. As packing plants became more dispersed, more and more livestock moved from farm to slaughterhouse through other than terminal markets.

Capital and vision are needed in areas with inadequate marketing outlets. It may be that more livestock is not produced because of inadequate market outlets, but with better performance of the marketing functions, production might increase and so result in more market volume.

The growth of local markets has been important in changing the markets used by farmers. Distance is a factor; transportation costs tend to increase with distance, so does shrink, and the risk of price change tends to increase with time from farm to market and time, of course, increases with distance.

*Some reasons for the development of various livestock marketing channels.* Farmers choose one market over another for many reasons. Various

<sup>3</sup> Sam H. Thompson and Knute Bjorka, *Community Livestock Auctions in Iowa*, Iowa Agricultural Experiment Station Bulletin 376, 1938. Otis T. Osgood and John W. White, *Livestock Auctions in Arkansas*, Arkansas Agricultural Experiment Station Bulletin 439, 1943. A. A. Dowell and Gerald Engleman, *Livestock Auctions in Minnesota*, Minnesota Agricultural Experiment Station Bulletin 352, 1941. *Marketing Livestock in the Corn-Belt Region*, South Dakota Experiment Station Bulletin 365, 1942.

studies have shown how this market selection is made.<sup>4</sup> The more important reasons for choosing a market are price, convenience, and confidence. It is recognized that both buyers and sellers must patronize a market for it to be a success.

Key factors in developing certain market areas are: (1) methods of buying and selling, (2) type of production, and (3) concentration of livestock.

*Methods of buying and selling.* Some species of livestock are much easier to buy or sell by description because of prevailing methods of grading. A large portion of hogs are bought primarily on a schedule of weights. A price for each weight group is posted each morning in the country markets and most of the hogs are bought at these scheduled prices. Any differences in dressing percentages for various lots of hogs, or difference in cut-out values of hogs in the same weight group are ignored.<sup>5</sup>

For species of livestock that can readily be sold by description, there is a greater tendency for local markets to be established. For livestock requiring buyers' inspection because of greater variations in dressing percentage and grade, local outlets are more in the nature of auctions and traders.

Market quotations indicate the narrow range in hogs as compared to cattle as illustrated by the following:

Prime Steers		Good-choice Hogs	
700-900 pounds	\$35.75-\$37.00	180-220 pounds	\$23.25-\$23.50
900-1,000 pounds	36.00 37.50	220-240 pounds	23.00 23.50
1,100-1,300 pounds	36.00 38.00	240-270 pounds	22.75 23.15
1,300-1,500 pounds	36.50 38.00	270-300 pounds	22.50 22.85
Commercial (all weights)	28.00 32.50		

Quotations from *Market News*, Vol. 36, No. 120, June 20, 1951, National Stock Yards, PMA, USDA.

The possibility of assembling uniform loads during the day is another factor to consider. Hogs are usually produced and sold in fairly uniform lots as to weight and grade. Cattle from the same farm, however, may vary widely in weight and grade. Therefore, assembling uniform loads of cattle for sale is more difficult. Fewer packers can handle all grades of cattle profitably, both for themselves and the producer, than is the case with hogs. If a cattle market did not have sufficient volume to permit sorting for uniformity, the number of available buyers would be quite limited. Generally, the market price is better when there are more potential buyers.

<sup>4</sup> *Ibid.*, pp. 130-131.

<sup>5</sup> The nature and extent of these differences is discussed in *Marketing Slaughter Hogs by Carcass Weight and Grade*, Minnesota Technical Bulletin 187, 1950.

A market operator can usually estimate with reasonable accuracy the numbers and weights of hogs he will have to sell on a given day. This is demonstrated by the record of the Illinois Livestock Marketing Association. These estimates for cattle are considered much more difficult by these market operators. If local markets are to reduce risk of price change to a minimum (and to keep their margins and costs at a minimum, this risk must be lessened), it is desirable that the selling price be known before purchase is made. Such forward selling of cattle would be impeded because of the difficulty in estimating volume and grade of the day's run.

*Type of production.* Farming and production methods influence the amount and type of livestock marketed. In a predominantly dairy area there will be many cull dairy cows, veal calves, and slaughter dairy cattle. There also will be a market for replacement dairy cows. Relatively small numbers of high-quality cattle will be sold. Marketings should be relatively uniform from month to month.

In areas with many beef cow herds, there will be wide variations in grade and weight of livestock sold. Both slaughter and feeder cattle will be sold. If large numbers of finished slaughter cattle are fed in the area, the market can also furnish feeder cattle. In both types of areas there will be wide seasonal variations in numbers of livestock marketed.

The type of production program determines the type of livestock offered for sale. Small production units and small consignments per sale encourage local marketing. In areas where livestock is marketed seasonally, there is a greater tendency for "traders" than in areas where marketings are relatively uniform from month to month.

*Concentration of livestock.* In areas of livestock concentration, there are more alternative outlets. This concentration of livestock is needed for two purposes: (1) to provide sufficient volume to keep down per unit operating costs; (2) to provide sufficient volume to permit sorting and grading to attract buyers with specialty orders. The largest number of auctions and local markets are in the areas of Illinois where livestock production or concentration are greatest. (Table 1).

A 1951 survey of channels of marketing used by farmers in three Illinois areas during 1950 illustrates some of these factors (Table 2).

Local markets are relatively more important for hogs than cattle. Hogs can be sold largely on the basis of description. Farmers can interpret market news reports on hogs to estimate their market value.

But other types of local outlets are more important for cattle. Because cattle are sold on a grade and weight basis instead of weight alone, sale by inspection is the usual method. Auctions are much more important for sales of cattle than of hogs. In both southern and western Illinois, there are relatively more beef cow herds than in the northwestern area. Many of

TABLE 1. LIVESTOCK CONCENTRATION AND NUMBER OF LOCAL MARKETS OF VARIOUS TYPES IN THREE ILLINOIS AREAS, 1950

Number of	Southern <sup>a</sup>	Western <sup>b</sup>	Northwestern <sup>c</sup>
	(In 16 Counties)	(In Five Counties)	(In Five Counties)
Local markets <sup>d</sup>	5	27	38
Auctions	4	6	10
Traders	105	88	100
Milk cows per 100 acres <sup>e</sup>	2.0	3.4	6.8
Other cattle per 100 acres <sup>e</sup>	3.6	6.5	13.7
Hogs per 100 acres <sup>e</sup>	10.0	27.2	28.8
Cattle marketed per 100 acres <sup>f</sup>	3.0	4.8	10.2
Hogs marketed per 100 acres <sup>f</sup>	11.6	33.6	38.0

<sup>a</sup> Includes White, Hamilton, Franklin, Perry, Randolph, and counties south.

<sup>b</sup> Includes Adams, Brown, Hancock, McDonough, and Schuyler counties.

<sup>c</sup> Includes Carroll, Jo Daviess, Ogle, Stephenson, and Winnebago counties.

<sup>d</sup> Excluding small slaughterers and locker plants.

<sup>e</sup> January 1, 1950.

<sup>f</sup> U. S. Census, Sales for 1949.

these cattle are sold unfinished. The trader becomes an important factor under such conditions.

A study of marketing channels used in 1940<sup>6</sup> emphasized many of these factors. For example, as number of livestock per consignment increased, the percentage going to terminal markets increased. The larger the consignment of feeder cattle purchased, the less important were local farmers as a source of supply.

In Illinois, traders purchased over half their livestock from within a radius of 10 miles. Local markets received over half their hogs from a radius of less than 50 miles.

There are many farmers who apparently prefer to sell on a price per head rather than price per pound. Since terminal market sales are almost entirely on a pound basis, these farmers use outlets such as traders and auctions, where sale by the head is more common.

TABLE 2. CHANNELS OF MARKETING USED BY ILLINOIS FARMERS IN THREE AREAS IN 1950

	Southern		Western		Northwestern	
	Cattle	Hogs	Cattle	Hogs	Cattle	Hogs
Terminal public markets	60.6	65.7	61.1	49.2	61.8	60.4
Local markets	9.9	24.9	10.4	43.0	7.7	34.0
Auctions	4.7	2.0	7.5	.4	15.8	2.6
Traders	10.3	3.1	13.9	1.6	4.7	.6
Other farmers	14.5	4.3	7.1	5.8	10.0	2.4

<sup>6</sup> *Marketing Livestock in the Corn-Belt Region*, South Dakota Experiment Station Bulletin 365, 1942.

### *Types of Markets Used*

*Terminal public markets* can be expected to be used more by nearby farmers. As the distance from market increases, the importance of such markets to small producers decreases.

*Auctions* can be expected when cattle with wide variations of weight, class, and/or of relatively low quality (commercial or lower) are produced; where cattle are marketed in less than truckload lots; or where large numbers of feeder livestock are sold.

*Traders* can be expected in areas where per sale marketings are in small lots; or, information is limited on market outlets and prices.

*Local markets* can be expected in areas with a high concentration of livestock that may be readily sold by description, especially hogs.

### *Conclusions*

Distance from farm to market is a factor in determining the type of livestock markets used by farmers. However, other factors are also important. These include habit, shifts in population, shifts in location of packing plants, capital, and vision of market operators. Methods of buying and selling, type of livestock production, and concentration of livestock are important in determining the types of livestock markets which develop in certain areas.

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### INCREASING LABOR EFFICIENCY IN PREPACKAGING MEAT\*

**P**REPACKAGED fresh meat is here to stay. The retail grocery industry, particularly the supermarkets, seems to agree, evidenced by the fact that today around 5,000 stores prepackage all of their meat and another 12,000 prepackage part of their meat cuts.

For a period of one year, the writer studied in detail two prepackaged meat stores which had just started prepackaging meat. At the end of the year these two prepackaged meat stores were not merchandising meat with a lower labor cost than were comparable butcher-service meat stores.

It is paradoxical that, although prepackaged meat is part of the general policy of less service and lower prices, these two meat stores had not utilized to the fullest extent the money-saving advantages of this technique. This was caused largely by failure to secure and maintain high labor efficiency.

\* Journal Article No. 1322, Michigan Agricultural Experiment Station.



### *One Store Used*

This paper covers a study of labor efficiency in the total process of prepackaging meat. Selected for the main emphasis was the more efficient of the two stores mentioned above. Although this project dealt with only one prepackaged meat store, it is felt that the general conclusions reached will apply to a substantial portion of the stores which prepackage their meat.

The objectives of this intensive survey were to: (1) observe the operations and learn just what each employee did; (2) time each operation to determine average times for each task; and (3) compute standards for packaging beef cuts by combining average times.

Nine persons were employed in the packaging operation of the sample store. Three were men—a head meat cutter, a meat cutter, a part-time butcher—and six were women—a hostess, three wrappers and two part-time wrappers. These employees worked 370 man hours and produced 7,797 packages of meat, based on a weekly average over an eight-week period. These figures resulted in an average production of between 21 and 22 packages of meat per man-hour of work.

A previous study had shown the average man-hour output to be around 35 pounds.<sup>1</sup> It was decided, largely because of this seemingly low output, to find out how long it took to perform the various operations in packaging meat. These include removing stockinettes, opening boxes, carrying carcasses and cuts, breaking the sides, cutting into wholesale and then retail cuts, trimming, traying, wrapping, weighing, labeling, marking, moving into the holding cooler, and moving out into the meat cases. "Work times" were obtained for each operation. The time records kept the first two days were atypical and consequently were not used in the final calculations. Several "normal times" were combined to secure an average time for each operation.

A cutting test on a side of beef gave figures on the per cent of the carcass represented by each cut. A theoretical model was then constructed, using the results of the cutting test and the average times computed for the various operations. This model represented the total man hours needed to move a 270-pound side of beef from the cooler to the meat case to the customer. Purpose of this was to compare the production output of the model with the output in the study cited above. It was felt that this example showed how this time data could be applied to all of the products handled in a self-service meat market. (See Table I.)

For simplicity, the times for the various operations performed on each

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<sup>1</sup> A. T. Edinger, and others. *Retailing Prepackaged Meats*, Washington, U. S. Production and Marketing Administration, Marketing Research Branch, 1949, processed, 27 p.

TABLE I. CUTTING TEST RESULTS AND THEORETICAL YIELD FROM A 270-POUND SIDE OF BEEF

Cut of Meat	Results from Cutting Test: Per Cent of Side	Number of Pounds per Side	Approximate Weight of Packages in Pounds	Number of Packages
Sirloin	5.1	13.8	1	14
Porterhouse	5.3	14.3	1	14
Flank Steak	0.5	1.4	1	1
Beef Kidney	0.3	0.8	1	1
Rump Rolled	4.0	10.8	3	4
Back End Round	1.9	5.1	1	5
Round Steak	6.6	17.8	1	18
Round Tip	3.6	9.7	3	3
Round Swiss	1.6	4.3	1	4
Square Cut Chuck	12.7	34.3	3	11
Rib Roasts	7.8	21.0	3	7
Short Ribs	2.0	5.4	2	2
Navel, Bone-in	4.5	12.2	3	4
English Cut	3.3	8.9	3	3
Hamburg	29.8	80.5	1	80
Bones, Waste, etc.	11.0	29.7	—	—
Total	100.0	270.0	—	171

cut were combined. These combined times were applied to the number of packages obtained from each wholesale cut. From this, it was possible to obtain the total time involved in the merchandizing of this beef, which was three hours and 40.1 minutes. (See Table II.)

A total of 171 packages were prepared from the beef side, giving a per-hour production of 46.5 packages. This is twice as much as the average output computed from records kept over eight weeks. The same answer was secured by using the average output of 35 pounds in the earlier study by Edinger. If the manhour output of 35 pounds is divided into the 270 pounds of beef, the result is 7.7 hours, still more than double the time taken for the same work in the model.

The next question, therefore, is: "Why was there so great a difference in the two studies?"

#### *Subsidiary Services Add to Cost*

Most of the difference comes from the fact that the model included only the time actually involved in processing a side of beef for the customer. There are at least eight other subsidiary services not included in the model, but which must be considered. These are listed in order of importance.

1. Cleaning—Much time is spent in keeping meat markets clean. Included are daily cleanings of blocks, saws, and all equipment; and weekly cleanings of coolers, holding rooms, and meat cases.

TABLE II. SUMMARY OF TIME CONSUMED IN PROCESSING AND MERCHANDISING ONE 270 POUND BEEF SIDE

Cut of Meat	No. of Packages	Time per Package (In minutes)	Total Time
Remove stockinettes, cut into wholesale cuts, move from cooler to processing room			8.8
Sirloin	14	1.6	22.4
Porterhouse	14	1.4	19.6
Flank Steak	1	1.6	1.6
Beef Kidney	1	1.5	1.5
Rump Rolled	4	1.2	4.8
Back End Round	5	1.6	8.0
Round Steak	18	1.4	25.2
Round Tip	3	1.1	3.3
Round Swiss	4	1.7	6.8
Square Cut Chuck	11	1.1	12.1
Rib Roasts	7	2.3	16.1
Short Ribs	2	1.1	2.2
Navel, bone-in	4	1.1	4.4
English Cut	3	1.1	3.3
Hamburg	80	1.0	80.0
Total	171		220.1 minutes OR 3 hrs. 40 minutes

2. Rewrapping—Customers quite often damage wrappings, some packages develop leaks, and others fade. All must be rewrapped. For example, during one day of the study, 1,314 packages were prepared. Of this total, 36.5 per cent were rewaps, including many remerchandized packages. It was found that 10 per cent of the average daily output were rewrapped packages.

3. Arranging the Meat Packages—Customers usually think the package on the bottom is the best. The resulting shuffling of cuts necessitates a great deal of time on the part of the hostess to maintain an attractive meat display.

4. Remerchandising—It is often necessary to trim or remerchandise cuts which remain in the case for several days.

5. Rest Periods—Rest periods are important, particularly when physical work is done. Rest periods must be clearly defined, however, or employees will take advantage of the situation.

6. Training—Most food chains are adding new prepackaged meat departments and this requires special training for managers and employees at the established stores. A training program of this type was in progress at the sample store at the time of this study.

7. Idle Periods—An excessive waste of time may result if the packaging process is not organized and maintained on an assembly-line basis.

8. Special Services—Even though this store was supposedly 100-per

cent self-service, some customers demanded and received special services.

These eight items are often overlooked by the inexperienced observer. In the sample store, they took 235 minutes per 270 pounds of beef; more time than the actual processing operations.

When the 220 minutes of actual processing time is added to the 235 minutes, it gave a total of 455 minutes used in merchandising the side of beef. This is 7.6 hours—about the same as the time based on the output of 35 pounds per worker per hour. Figuring it another way, 171 packages were prepared in 455 minutes. This meant 2.66 minutes per package or 22.6 packages per hour; very close to the eight-week average of between 21 and 22 packages per hour.

### *How to Increase Output per Worker*

How then can the output per worker be increased? If each worker were as proficient at his job as the most proficient in the study, the output could have been increased 10 per cent. The methods used by the most proficient worker in every operation should be taught to all the other workers so that this increased efficiency may be realized.

About 10 per cent more output could have been obtained by the elimination of excessive talking, loafing, and unduly long rest periods.

Packaging meat is a production line process. Specialists do their part in preparing each package for sale. It is recognized that it is difficult for a service store to convert and set up the meat processing room as efficiently as an industrial assembly line or a new prepacking meat store. It is believed, however, that the sample store could have rearranged its equipment and applied the production-line techniques well enough to have increased output from five to 10 per cent.

Added together, these time-saving policies would increase the output per worker in the sample store from 25 to 30 per cent. This could be achieved without any remodeling or drastic changes in store policies. All that would be necessary is rearranging the equipment, adopting the best work methods already being used in the processing room, and eliminating idleness.

In summary, greater increases can be made in labor efficiency of pre-packaged meat stores if:

1. The meat departments are designed and laid out efficiently.
2. Time and motion studies are made and their results applied to the training of employees, new and old alike.
3. Each employee is impressed with the importance of doing a day's work for his day's wages.

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## SOME LAND PROBLEMS IN TURKEY\*

THE character and stability of a nation depend in a large measure on the area of productive land and the ownership distribution of this land. Where the man-land ratio is high and/or the land ownership is concentrated, misery and discontent often prevail. The people in such places are easily influenced by land reform or promises of land reform. People living on marginal or submarginal levels have a strong incentive to sacrifice desirables long-run objectives for possibilities of short-run gains.

There is much concern today regarding the allegiance of the people of the Middle East to one or another political or social ideology. The purpose of this paper is to describe the land situation and some of the land problems of one of these countries, Turkey.

*The Land*

Turkey contains approximately 200,000,000 acres, of which two-thirds are used for agricultural purposes.<sup>1</sup> One-fourth of the agricultural land is used for crop production. Most of the remainder is devoted to pasture lands. The cropland is divided into small tracts which are owned by private individuals. Pasture lands usually are in large tracts and are owned and used in common by the village people. Each farmer utilizes an average of less than 12 acres of cropland, orchards, and vineyards and about 40 acres of pasture land. The farm population is most dense along the Black Sea where many farmers have only one or two acres of cropland. Farms are largest in the cotton area in Southern Turkey on the Mediterranean coast.

Most of the cropland is on the plateau of Central Turkey where the altitude is approximately 3,000 feet and the annual precipitation is from 12 to 14 inches. Although the precipitation is light, it is received in the fall, winter, and spring months and generally consists of gentle rains or showers. The runoff, therefore, is comparatively light. With summer fallow and good practices, wheat will yield 15 bushels per acre harvested. The dry summers permit the grain to be cut, threshed, and dried in a slow manner without danger of loss. Normally, small grains are harvested from about one-half of the total cropland and more than two-thirds of the remaining cropland is in summer fallow.

\* Contribution number 171, Department of Agricultural Economics, Kansas Agricultural Experiment Station. The author spent 15 months in Turkey as the Agricultural Economist for the Economic Cooperation Administration Special Mission to Turkey. The author is solely responsible for this article, and he does not represent the Economic Cooperation Administration in presenting his views.

<sup>1</sup> Statistical information for Turkey is scarce and not entirely reliable. However, many improvements in providing statistical information are being made. The Economic Cooperation Administration has provided technical and other assistance in this field.



There are no areas that are entirely barren or that can be called desert land. Natural vegetative growth is sparse throughout much of Turkey because of low rainfall, overgrazing, erosion, rockiness, or mountainous conditions. There are some forest areas but lumber is scarce, poor in quality, and high in price.

Soil erosion is much less severe than might be expected in a country whose land has been farmed continuously or intermittently for so many centuries. The amount and character of the precipitation partially explains this. Little organic matter is incorporated into the soil. All vegetative growth is utilized for food, fuel, or other purposes. Manure is used primarily for fuel. Rotations, including legumes and cover crops, are almost unknown. Experiments show that the soils respond well to nitrogen and phosphorus fertilizers. Some land is irrigated, mostly in an inefficient and haphazard manner.

The rainfall is lower and the proportion of wasteland may be somewhat higher than in most European countries, yet the land resources in Turkey are not being utilized fully. The land could support a larger population with a higher level of living than exists at present and could provide more farm products for export.

#### *Land Tenure*

The best information available indicates that about 75 per cent of the farmers own individually, part or all of their cropland, and that pasture land generally is owned in common by the villagers. In Southeastern Turkey, there are a few large landowners and the percentage of tenancy is comparatively high. Otherwise, individual ownership of property tends to prevail. Even though the farm people live in villages (about 35,000 villages, each consisting of an average of 60 or 70 farm families), the real estate in the village, cropland, livestock, equipment, and other property except the range land is owned privately, usually by those using the property.

A strong feeling for individual private property exists. Joint ownership and use of certain property, such as the range land, has been accepted for many years. The people hesitate to extend this practice, however, for fear that it might lead to collective farming. This characteristic provides one of the bases for believing that the Turkish people lean strongly toward the Western World.

Tenants usually pay their landowners shares of the crops varying from 10 to 67 per cent. Lower rates prevail where land is abundant relative to the population; where the land is poor or water, transportation or other amenities are poor; and where only the bare land is furnished. Higher rates are found under opposite conditions. There are a few cases where

one landlord owns the village real estate and part or all of the farm equipment and livestock.

### *Principal Land Problems*

A small and relatively inadequate area of farm land constitutes a major land problem for many farmers. This is true particularly in the Black Sea region. Turkey has some areas that are not now settled and some areas that are producing but little as grazing land. If farmed properly, many of these areas could be made productive as cropland and support more people or provide land for those who now have farms of inadequate size. Absence of a developed water supply for domestic uses, lack of communications, inadequate farming methods, inertia, uncertainty of ownership,<sup>2</sup> and other reasons can be given for the existence of undeveloped land.

Land reform acts have been passed (principal act was in 1945) providing that public land or large privately-owned tracts of land, which are not being used fully, are subject to government purchase for resale to individuals who lack adequate land. The area which one person may buy varies from two to 20 hectares (five to 50 acres), which is considered the minimum for a family. Because of political pressure, the phases of the acts concerning the purchase of excess private lands have been applied only to a limited extent. The area of land distributed to date is comparatively small. By promoting a land redistribution program, the government expected some political advantages as well as providing real economic assistance to the people. No one knows, however, the real results of the program.

Providing people with adequate land often requires some population migration, and it must be remembered that immobility of people is greater in an old country than in a new one. The physical and economic conditions are particular handicaps. Also, people have stronger family ties, and many believe that a person should live near or return periodically to the old home and to the place where his ancestors are buried. Because of the immobility of the people, relief from the congested conditions in certain areas, particularly along the Black Sea, will be a long process. The people will continue to be poor, and the land problem will continue to be a disturbing factor.

Fragmentation of farms continues in Turkey. It is the rule for the cropland of one farmer to be in 10 or 12 noncontiguous irregular tracts. Inheritance laws generally provide that the land be divided equally

<sup>2</sup> Lack of a survey to establish land ownership boundaries accurately, an inadequate registration of land, and claims of descendants of landlords owning or claiming interests in large tracts of land granted to them many centuries ago give rise to uncertainty in land ownership.

among the children. In practice, the villages do not apply the laws precisely and uniformly; and some land tracts are not divided when they are passed on to the children. But the rather strong desire to treat all the children equally results too often in tracts of land being divided. The economic evils of fragmentation of land exist in Turkey, particularly where economic improvement is being sought. No program for consolidating land holdings exists at present.

No land survey has ever been made that would permit reliable and permanent legal descriptions of the land. The "metes and bounds" system is used when the land is registered. Registration officials either do not have facilities or do not desire to check the accuracy of their descriptions. To avoid taxation, areas frequently are registered as much less than the actual area. In a legal case, the metes and bounds determine the true content of the tract of land. Subsurface resources belong entirely to the state.

Collateral still is the primary basis for making a loan and real estate generally is the principal eligible collateral. Land has to be registered for loans made by the Agricultural Bank. Much capital will be required to improve the agriculture of Turkey. Most of the farmers will have to borrow money for these improvements because present incomes are so low that there is little opportunity to save and accumulate capital.

### *Solution of Problems*

Information is not readily available for a detailed analysis of the land problems in Turkey. However, such a complete analysis is not necessary to suggest some means for solving the problems. Steps which might be taken toward the solution of these problems are:

1. Additional education of both youth and adults will contribute most toward improvements at the least cost. Incentives, natural and artificial, must be developed along with education, particularly early in the program. With education and incentive, people will make many of their own improvements and raise their incomes and levels of living.

2. Much capital will be needed. Most individuals will have to borrow capital, particularly in the earlier stages of making improvements, and the government must continue to provide funds for credit. The government also might well consider a program of insuring loans made from private sources, thereby reducing the cost of credit to the borrower.

3. New farming areas should be developed. The government will need to assist in providing water, transportation and other facilities, and supervised programs for the settlement of people. Dry-land farming areas should be given first consideration. Irrigated areas can be improved and extended also. Natural resources in each area will need to be examined carefully before development begins.

4. The present land redistribution program should be expanded and improved to help people acquire adequate areas of land. (This program is related closely to 3 above.)

5. A farm consolidation program would eliminate, in so far as possible, fragmentation of land and its associated problems.

6. A land survey and improvements in the land registration system should be effected. Much time will be required to plan and execute a practical survey.

7. Research in land use and land use practices should be expanded. Emphasis should be given to research of a practical and applicational nature, in contrast to basic research such as the chemistry or physics of soils.

8. Expansion of industry, commerce, and professional services will help relieve congestion in some rural areas. Some of this expansion will naturally result from increasing incomes and demand for products. However, the government will need to encourage the expansion of nonagricultural occupations. This is particularly true of occupations relating to the handling and processing of agricultural products; production and repair of farm equipment; and provision of other necessary farm supplies.

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## FARM PRICE POLICIES IN SWEDEN

FARM people in Sweden look back to the thirties as a period of distress which they hope will never come again. In talking with farmers—in Skåne or Uppland, Dalarna or Östergötland—one finds the same fear of another depression and concern lest the present agricultural program may not be effective in preventing another such depression.

### *Present Price Policy*

Up until 1930, Sweden had no import duty on agricultural products, such as feeds, but there were regulations on the quantity of imports. The world break in prices, however, adversely affected Swedish farmers in a very serious manner, bringing a disastrous decrease in prices for the Swedish farmer. The farmers' standard of living dropped, and conditions were not unlike those of a half century before, especially for the great majority of farmers living on small farms of 25 acres or less.

The New Agricultural Price Policy, approved by Parliament in June of 1947, is designed to: (1) prevent a depression; and (2) assure the agricultural population that their standard of living will be raised to the

same level, ultimately, as that enjoyed by other comparable trade groups.<sup>1</sup> This is not to be done through prices alone. The program calls for "rationalization" in agriculture to reduce production costs and improve earning conditions, as well as to protect and adjust prices of agricultural products so that farms of a certain acreage will provide satisfactory incomes when "rationally" worked. The basic philosophy is that the community (or society, or the state) will insure farmers a good living through prices which will return a reasonable profit, if farmers in return will organize their farms for the most efficient production possible.

Based on the experiences of two World Wars, the 1942 National Agricultural Committee set as its first objective the provision of sufficient agricultural production to provide a normal total calorie intake per person during a period of blockade. Ten years ago, the food consumption in Sweden—measured in calories—was about 3,000 units per person per day. In 1949, despite a 10 per cent increase in population, it was up to 3,100 units, which actually may be conservative by 200 units, according to European Economic Mission and American Embassy estimates. Quantitatively, the Swedish diet is probably one of the best, if not the best, in Europe. Even so, food consumption is considerably below potential levels, given the general availability in quantity and variety at prices within the budgets of the masses of people.

When settling the basis for prices in the National Agricultural Committee, differences arose as to whether farmers should be given price incentives to provide a *minimum* or an *adequate* diet in a period of blockade. The minimum would be the standard of nutrition prevailing at the lowest period during World War II. This, it was argued, was sufficient then and should be sufficient in another similar period. This is especially true if food stocks are provided, and it would not entail too heavy a drain on the national economy. Moreover, it was argued, it is possible to expand production rapidly in time of blockade, especially if an effective conservation program is carried on in peace time.

An adequate diet, called the *mean alternative*, would provide for normal food consumption prevailing just previous to the period of blockade (or, as in 1939, 3,000 caloric units per person per day). This would call for a degree of self sufficiency of 92 per cent. It would mean that, taking into consideration the expansion of population and consumption up to the year 1970, approximately 95 per cent of the present tilled acreage would be required to provide this amount of food. This would take into account, also, the probable increase in yields due to

<sup>1</sup> *The Great Agricultural Reform*, Sveriges Lantbruksförbund, mimeograph, Stockholm, 1949, p. 2.



improved methods. In spite of objections, therefore, the government retained the *mean alternative* in its final bill.<sup>2</sup>

### *Farm Income and Cost Calculation Methods*

The present calculations of agriculture's income and costs are based on those used for agriculture as a whole.<sup>3</sup> This is called "global" calculation. In the calculation, agriculture is regarded as a single enterprise; but income from forestry and timber, as well as other similar items, is not included. Nor does the calculation include transactions between farmers, or the value of the dwelling house; but it does include farm family consumption of agricultural products, and wages for family and other labor. Costs include, moreover, interest on borrowed capital and that invested by the farmer in the enterprise.

The base year for computing comparative prices is 1938-1939. The "production year" is from September 1 to August 31. Purpose of the calculation is to estimate the relative change in income and costs since 1938-1939. Thus, it may be said to be a plan to insure basic incomes.

For the year 1948-1949, the income from agriculture necessary to cover costs was 2,812.3 millions, which provided a calculated surplus on the income account of 24.0 million Swedish crowns.<sup>4</sup> Computation for the next year, 1949, showed a deficit of 47.8 million crowns, although the farmers insisted that it was 129 millions. This deficit resulted in increased milk prices over the year before, but this increase was only half as much as the farmers thought it should be.

Farmers' opinions are sought in various ways on what prices should be. Farmers' organizations, particularly the Farmers' Union (RLF), take a poll of farmer opinion as to the proper price scales before the national computations are made. Then, using these opinion polls and the data from book-keeping farms, individual prices are computed for each product, with principal emphasis on milk and meat. Special attention is given to interest

<sup>2</sup> *The Great Agricultural Reform, op. cit., passim.*

<sup>3</sup> The price level for 1925 to 1929, formerly used as a base for agricultural price computation, was abandoned at the outbreak of the second World War. Also discarded was the price index based on variations in prices, wages, and rates of interest, computed by A. H. Stensgård, director in the Federation of Swedish Farmers' Associations, at the request of the Food Commission (as result of parliamentary action in 1939). It gave no indication of changes in agriculture's economic position due to factors such as the decrease in production occurring after the poor harvest of 1940.

<sup>4</sup> K. O. Wahlfisk, "How the Agricultural Calculation is Made," Food Commission, mimeograph, by Lantbruksförbund, Stockholm, 1949. Including 5.2 million Swedish crowns paid in government bonuses during the summer of 1948, agricultural income was 2,836.3 millions; in 1938-1939 it was 1,365.2 millions. Costs in 1948-1949 were computed at 3,018.4 and in 1938-1939 they were 1,465.5 millions. The cost index in 1948-1949 was 206.

paid on inventories of different types of farms. If the interest paid is lower on some products than on others, the computers feel that an increase in price is justified on that product.

Since 1943, the prices of agricultural products for the following year have been fixed in the spring, based on the "normal" calculation prepared in February. Farmers prefer to get the information on prices in the spring-time. The prices fixed are based on the assumption that there will be normal weather, constant interest and wage rates, and unchanged prices for agricultural products and requirements. In fixing prices, however, computers take into account changes that can be foreseen at the time the calculation is made.

The agricultural calculation is usually revised in August when the results or condition of the year's harvest can be surveyed fairly satisfactorily. If the February calculation, when revised in August, shows either a deficit or a surplus of more than four per cent of the total income in the normal calculation, prices are adjusted to remove the amount in excess or deficit. If the surplus or deficit does not exceed four per cent, farmers must take the loss or enjoy the profit.

Calculations are made each year under the direction of a special committee of the Food Commission.<sup>5</sup> The representatives of the Federation of Swedish Farmers' Associations compute most of the data. The income data and some of the cost data come from the Food Commission. The completed calculation is examined by the Food Commission's Council, made up of representatives from farming, commerce, the food industry, consumers, and other groups. Then, the Food Commission submits to the

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<sup>5</sup>Wages paid form a large part of the costs. Included in wages are those of the operator and members of his family who work on the farm, as well as hired labor. These costs are based partly on the total labor volume in man-hours in agriculture proper and partly on hourly rates. Figures come from two chief sources: official account-keeping farms; and wage statistics collected by the Social Board. Hourly pay rates are based on a weighting of the actual totals of hourly wages accounted for in the Social Board's statistics, and are cash wages plus value of payments in kind, when applicable. These prices are set on the basis of calculations which include wages at rates somewhat comparable to rates paid industrial workers, although somewhat lower.

Costs for artificial fertilizers, purchased feeding stuffs, fuel, etc., are assessed on the basis of current statistics for production, sales, and prices, and planned production and import. Special indexes are used for maintenance costs for machinery, equipment, and farm buildings. Depreciation is based on replacement value.

Incomes include value of products sold and the value of products consumed on the farm or in the home or used for payments in kind. The income side of the normal calculation is based on an estimate of the harvest, which in turn is based on certain assumptions concerning the areas under various crops and the yield per acre. Thus, income from products such as cereals, potatoes, sugar beets, and oil plants can be calculated, with storage losses, cleanings, seed requirements, etc., taken into account. Income from milk, meat, eggs, and other animal products is estimated on the basis of probable supplies of feeding-stuffs, the number of animals, trends in numbers, and changes in production per animal.

government a price proposal based on these calculations. The government submits it to Parliament for approval.<sup>6</sup>

### *Proposed Changes*

Several changes in this procedure have been proposed. The average farmer in Sweden gets less per hour under the present pricing scheme than does the industrial worker; this the agricultural leaders recognize. Parliament, therefore, has decided to try to insure farmers the same earnings as industry workers. This point has not yet been reached, but progress is slow because consumers react against having to pay higher food prices or higher taxes. The government is committed to support farm prices to attain the desired level of income, even though this will mean that prices of domestic farm products will be higher than world prices. At present, however, Swedish farm product prices are considerably below world prices, as they have been for several years.<sup>7</sup>

A new system for the source of records is being worked out. It is recognized that the records coming from the present official record-keeping farms have been somewhat above the average, although the farmers themselves have had a voice in selecting the farms used for record keeping. The new plans are designed to give detailed study of conditions on the average farm, to get exact data on costs and income in order to find out if operators of such farms get more or less pay than industrial workers. For this purpose, farms ranging from 25 to 50 acres crop land will be used. Selection of farms is to be made through the cooperation of farmers and government.

Adjustments also are needed as to area, crops, and their economic effects on the farm. Other costs not now included must be added. Prices for different regions and different products will be computed on the basis of an expanded sample of farms (the present sample includes about 1,700 farms). By using farms of from 25 to 50 crop acres for accounting purposes and as the kind which will produce satisfactory incomes, there will be pressure on the smaller farms to enlarge. And operators of the larger farms can get the basic income plus whatever greater efficiency of size their farms may provide.

No decision has been reached on a method for selecting account keepers, or what agencies will summarize the accounts and help the farmers in keeping them. At present, in addition to the help given by the Federation of Swedish Farmers' Associations, assistance in summarization is given by the Agricultural Economics Department at the College

<sup>6</sup> Wahlfisk, *op. cit.*, *passim*.

<sup>7</sup> From personal interviews with Statssekreterare C. H. Nordlander; and Professor Hugo S. Osvald, College of Agriculture, Ultuna, who is also a member of the Upper House of Parliament.

of Agriculture at Ultuna. There is some sentiment for setting up a separate government agency for these purposes, but the services of the college, even so, would be required. The Federation recently set up its own research agency,<sup>8</sup> for it was felt that the work should be kept, partly, at least, in the hands of the farmers themselves. The agents for the County Agricultural Associations and the representatives of the Federation in the counties will work together in selecting the farmers to keep the accounts, in helping them, and in summarizing the records.

### *Effects on Farm Size, Population, and Production*

It is hoped that the present forward-pricing policy in Sweden will not only provide adequate and stable farm incomes but also that it will increase the size of farms to the desired minimum of 25 crop acres on the basis of full-time operation. The conclusion of the investigations by the Agricultural Commission of 1942 was that the most desirable size is 50 to 75 crop acres. Of the present 414,441 farms, only about 100,000 are 25 acres or more in size. Combining the other 314,000 farms into farms of 25 or more acres would reduce the total number of farms to less than 150,000. This would mean a reduction in the farm population of considerably more than 50 per cent.<sup>9</sup> The Commission concluded, therefore, that the pricing plan should be based on the farm with 25 to 50 acres, in the hope that farms smaller than 25 acres would gradually be absorbed by other farms to make the desirable size.

The theory behind the Swedish forward-pricing plan is that by pricing crops in low supply high and crops in large supply low, a natural adjustment will take place: farmers will increase production of the high-priced crop and decrease production of the low-priced crop. Whether this will be the result is yet to be seen. Price fixing from year to year may not have the full effect expected, as farm production is not flexible enough to permit such short-time changes. Moreover, the tendency in the community to get into a particular line of production and not to change from it is quite strong; it is strengthened by the customary way of doing things in the community. The small farmer, and Sweden has mostly small farmers, cannot afford to make hasty changes. There may, on the contrary, be a tendency to increase production of a crop or product on which the price is lowered so that the farmer may be somewhat assured of a total income comparable to the normal. Milk prices, as a matter of fact, were not as high in 1949 as farmers felt they should be; yet milk

<sup>8</sup> Called the "Institute for Agricultural Investigations," and located at Stockholm.

<sup>9</sup> Estimated by Holmström, Lantbruksförbund, in personal interview, November, 1949. The number of farm figures are for 1944. It was reported that since then there has been an annual reduction of about 5,000 farms.

production increased more than 10 per cent over the previous year. It was necessary to seek export markets for the surplus.

### *Effects on Farmer Participation*

The price regulating activities are in the hands of the State Agricultural Commission.<sup>10</sup> The chairman is appointed by the King of Sweden, as are members representing various groups of interests, such as farmers, industrialists, and consumers. In addition, members who have a consulting capacity are appointed by the King on the basis of suggestions coming from various organizations concerned.

It is apparent that the prices farmers receive for their products are determined largely by negotiations of a central governmental agency. Costs and income on which prices are based are secured from the farmers, but on a selective basis. Governmental and farmer leaders in the government-financed County Agricultural Societies select the farms for analysis.

The farmers of Sweden have taken for granted a large measure of central planning. They have accepted the need for considerable governmental influence in farm price determination. They recognize that they cannot compete with farmers of the New World. The average farmer, however, loses his sense of responsibility for policy making in a program of centrally controlled price fixing; he simply takes what comes and accepts the new system as necessary and inevitable. Government direction has consequently become more authoritarian. The more leadership is weaned away from the people, the more authoritarian it becomes. People lose interest in everything but the results and are content to allow the central authorities to make all policy decisions. This looks in the direction of authoritarianism—not democracy—both in policy-making and in administration.

Since the program for calculating and fixing farm prices in Sweden is now largely in the hands of the national leaders, although some are leaders of the farmers' own organizations, it is very important that those selected for such leadership have a high sense of responsibility and a keen sensitivity to the opinions and wishes of the people in whose interests they are working. This seemingly has been the attitude of most farm and labor leaders in Sweden up to the present time.

### *Farm Reaction to Forward Pricing*

Farmers in Sweden believe that the present price policy is enough better than the "old way" that few would give it up; but they are not satisfied with the way it works nor with the part they have in it. Over

<sup>10</sup> Richard Hakansson, *Swedish Agricultural Administration and Research*, Agriculture Information Service, Stockholm, 1950, p. 4.



half of 330 farmers surveyed by the author in his study of farmers' opinions regarding social policies<sup>11</sup> voiced the belief that conditions today are better than they were before price regulation. Yet more than a fourth said that farmers under the new system have no voice in how the policy should operate. More than one in ten, especially those living on the larger farms (25 crop acres or more) said frankly that it is not a good policy. These reactions indicate that all is not well in the way the new price policy is received by the rank and file of farmers.

A farmer on 25 crop acres in Skåne, the rich southern plains, said, "The plan must be changed so that representatives of farmers from all of the country will supervise cost accounting and take part in price calculations." A farmer on a large farm (about 200 crop acres) felt it important that price policies be discussed in the commune and that these discussions be the means of guiding the Stockholm representatives.

Farmers of Sweden, in general, give support to the present policy for fixing farm prices. In conversation they give the impression that they have found a sense of security under the new policy that they did not have before. One gets the impression, also, that they recognize the need for changes in the present plan. Most of them would like to see some means developed for giving farmers more voice in the making of price calculations, asserting, however, that an improved price fixing plan is essential to a profitable agriculture in Sweden. This is significant. Of equal importance, however is the fact that the new Agricultural Price Policy ties the welfare of the farmer to that of the laboring man in industry.

Wages play an important part in the price computation; such wages are based on wage rates comparable to those of workers in industry. The small farmer, especially, will be most interested in the results of the computation. It will not be surprising if he identifies himself sympathetically with the interests of the industrial worker. He will want the farm worker to get comparable wages so that his labor costs included in the computations will return the farmer income on a level comparable to that of the man in the city. Small farmers outnumber the large farmers. If the small farmers relate their interests to those in industry who are in the majority, the laborers, they may have the balance of power in price policy making.

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<sup>11</sup> D. E. Lindstrom, "Farmers and Social Policies in Sweden," University of Illinois, Agricultural Experiment Station, mimeograph RSM-24, March, 1951.

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## BOOK REVIEWS

*Government Project*, Edward C. Banfield with a foreword by Rexford G. Tugwell, Glencoe, Illinois: The Free Press, 1951. Pp. 271, \$3.50.

This is a case history of a cooperative farm established by the Federal government as a part of its many efforts to ameliorate distressed conditions of rural poverty during the depression years.

The author points out that the project was a direct descendent of the subsistence homestead idea. These grow-your-own-food "homesteads" had been promoted by the government during the early thirties to encourage the back-to-the-farm movement and thereby relieve unemployment in urban areas. The same general plan was continued and broadened to include an attack on rural unemployment by the Emergency Relief Act of 1935 which created the Resettlement Administration. This agency had, among its other functions, the mandate "to administer approved projects involving resettlement of low income families from rural and urban areas, including the establishment, maintenance and operation, in such connection, of communities in rural and suburban areas."

These projects were of two major types: (1) the "infiltration" type, which consisted of individual farms located in existing farming areas, and (2) the "community" type, in which contiguously located farms were individually operated but in which a number of community services such as schools and canneries were provided. A few of the latter type differed from the others in that they were operated by cooperative associations and not by individual farmers. The *Government Project* which was located on an irrigated area in central Arizona was one of these. It became known as an FSA project after the Farm Security Administration succeeded the Resettlement Administration in September, 1937.

Original plans for the project envisioned 80 separate but contiguously located farms of 40 acres each. However, when the final planning got underway, it became necessary to find some means of cutting construction costs, especially the costs of utilities. This resulted in changing the project layout and ultimately all of the houses (60 instead of 80) were constructed in a central location. The farm management specialist on the planning committee saw a number of important disadvantages to this arrangement if each 40-acre unit were to be operated individually. As a consequence, he recommended in the interests of efficiency that all of the land be operated collectively. This recommendation was adopted and by the summer of 1937, the proposed 80 farms of 40 acres each had become one cooperative farm of 4,172 acres (972 acres had been added to the original tract).

After providing the above background, the author describes chrono-

logically the major events in the short life of this government project in 11 detailed but interesting chapters. This narration is followed by one chapter each on the liquidation of the project, a resume of experience with cooperative farms elsewhere, and an analysis of why these projects failed. At the end of the book there are 11 pages of notes and references to sources and one page of names prominent in the story.

Banfield's story is a play-by-play description of the failure of a government project and a portrayal of some of the strange ways of human nature. All of the families that settled on the project had one common characteristic—destitution. Nevertheless, as soon as they began to get on their feet economically, and the struggle for life's essentials was no longer a matter of immediate day-to-day concern, the uniting bonds of poverty were quickly forgotten. No cohesive influences arose to take their place, not even the spirit of cooperation. As a result, individualism grew rapidly and disunity was one of the principal end products.

Despite the lack of a cooperative spirit among the settlers, the project made progress economically. By 1940, at the end of three years of operation, the farm was solvent, and that was something of an accomplishment in view of all the difficulties (including a shortage of irrigation water). The next two years brought financial success beyond most expectations. Net profit for the year 1942 was \$36,800 and the farm's assets were listed at \$313,000.

Nevertheless, the settlers were never a happy lot and membership dropped from a high of 57 families to 39 by the beginning of 1943. Dissatisfaction seethed almost continuously throughout the project and factionalism was rampant. The usual attitude of the settlers toward the FSA officials was one of distrust and hostility.

The *Arizona Daily Star* summed up the situation with this commentary: "Evidently Americans do not like to be collectivized even under the most bountiful kind of circumstances. . . . Americans like to be their own bosses and they get tired of being wet-nursed by the government. . . . They cannot eradicate from their American character a belief that there is something more in life than security."

The death knell for the project was sounded in the Agricultural Appropriations Act of 1943 which prohibited the use of FSA funds for resettlement projects or cooperatives. Liquidation of the project was completed late in 1946. After liquidation, most of the former settlers remained in the community; many are still there. One of them in a reflective mood wrote sometime ago that now all the former settlers agree that the cooperative was not so bad after all and they wished it were still in operation. They were a little late in this conclusion but at least they could, at long last, agree.

This book is well written and clearly shows the good use which the

author made of his several and authoritative sources of information. The implications in what he has said are much wider than those involved in the technical and economic aspects of the operation of a cooperative farm. The author sticks closely to the "life study method" throughout the description of the life and death of the project. The concluding chapters, however, suggest broader interpretations which are certainly present for those who will look for them. As Dr. Tugwell says in the foreword, we can see in this book many lessons if we will.

PHIL S. ECKERT

*University of Arizona*

*The Governmental Process: Political Interests and Public Opinion*, David B. Truman, New York: Alfred A. Knopf, 1951. Pp. xvi, 544, xv, \$5.00.

Professor Truman's book is not just another study of the goods and evils of political interest groups. Rather, as a neutral observer, Professor Truman has as his chief purpose the providing of a conceptual framework for the analysis of the governmental process in terms of group interrelationships. One of his chief contributions is the incorporation into his analysis of relevant knowledge from the various social science disciplines, particularly those of cultural anthropology, sociology, and political science.

Those are the book's chief values, and they are important ones. But there are others. The author's exhaustive study of previous writings in the field has enabled him to point to large gaps in our knowledge where further data is needed. This is more than a mere "passing on" of research ideas, for the author has provided a conceptual framework into which the findings of students in the various social science disciplines can be fitted in meaningful fashion.

Another by-product of the book is the wealth of examples taken from the various economic and social sectors to illustrate and to test his propositions. The investigation of the origin, structure, internal dynamics, and external political relationships of agricultural groups are carried along as one of the main case studies throughout his analysis. One can learn much from this study about the ecology of government in agriculture.

The first part of the book deals with the fundamentals of social groupings in their origin, structure, operation, and interrelationships. Here the author draws heavily from the knowledge developed by social psychologists and applied anthropologists. Not the least of his contributions in this area, where semantics is an almost insuperable barrier, is a marked precision in terminology.

Next, Professor Truman explores the "internal dynamics" and "internal politics" of groups. This involves an investigation into the problems and techniques of leadership in the complex of overlapping group member-



ship and conflicting attitudes and affiliations of membership. Finally, the principles evolved in the first two parts of the book are applied in an analysis of the tactics of interest groups in the government arena. The dynamics of "access" to and "influence" over the decision-making agents in the web-like process of political decision is described and analyzed in a systematic manner. Since the author views interest groups as "natural," rather than "unusual," "evil," or "good," he takes a generally dim view of "nostrums and palliatives" typically suggested in connection with the controlling of pressure groups.

The molding of a miscellany of facts into a conceptual pattern involves the calculated risk of distorting individual pieces to get a snug fit. On the whole, Professor Truman successfully and admirably avoids this hazard. However, it may be questioned whether, in his effort to explain all political phenomena in terms of group interaction, anything in particular is gained by his rejection of the traditional vague concept of the "public interest" in favor of an interpretation of the force of the "public interest" in terms of "potential" interest groups.

To those of us who believe that the social science student who operates entirely within his own narrow specialty is no better off than the isolated "individual" of classical economic and democratic political theory, this integrative work of Professor Truman should serve as a new hope and a new challenge.

W. ROBERT PARKS

*Iowa State College*

*The Principles of Farm Finance*, Emil S. Troelston, St. Louis, Missouri: Educational Publishers, Inc., 1951. Pp. x, 397, \$5.50.

Troelston's "Principles of Farm Finance," written from the point of view of the farm operator, is one of the best books in the field, and can be studied with profit by the farm operator and the college student planning to operate a farm.

Farm finance is interpreted to include the use, assembly, and protection of capital (physical and monetary) by the farm operator and/or owner. Parts I and II present an introduction to the book and a short general history of farm finance problems and the development of the credit agencies servicing agriculture. Part III is a discussion of the organization, operations, and service facilities of the major federally-sponsored credit agencies. In Part IV, a brief examination is made of the private and local governmental sources of agricultural credit. Part V is titled "Individual Farm Finance Principles and Problems."

Part III provides an excellent discussion of the federally-sponsored credit agencies and provides much of the information about these agencies which the credit user would like to know. This section is one

of the most complete in the book and includes a discussion of the major agencies with the exception of the Rural Electrification Administration.

Part V approaches the farm finance problems analytically from the farm management point of view. The farmer and potential farmer wanting to make the most efficient use of capital would be expected to profit from an examination of the materials presented in these chapters.

There are two major limitations in this book from the point of view of classroom use. The first results from the relatively brief development of Parts II and IV which at most provide adequate treatments of their subjects for students not intending to specialize in agricultural economics. These parts could have been expanded in a way which would have resulted in the presentation of the farm finance problem in a broader frame of reference. If this book were used in a class where the students are majoring in agricultural economics, additional readings would be required. The second limitation of this book results from the fact that the agricultural credit agencies were not examined in reference to policy. If the agricultural credit agencies had been treated as variables rather than as largely given, questions of policy could be more logically considered. Inclusion of policy would have made this publication more useful to the advanced student.

A more thorough discussion of the history, private lending agencies, and policy issues of farm finance would have been beyond the intended scope of the book. However, such a discussion would not have required a large amount of additional space, and the resulting volume would have been more useful to the agricultural economist and the student majoring in agricultural economics.

GEORGE K. BRINEGAR

*University of Connecticut*

*Forestry in Farm Management*, R. H. Westveld and the late Ralph H. Peck, Second Edition revised by R. H. Westveld, New York: John Wiley & Sons, Inc., 1951. Pp. xi, 340, \$5.00.

Students and practitioners of farm management have given scant attention to the potentialities of forestry as an integral part of a system of farming. They have concentrated their attention on crops and livestock. There are two reasons for this neglect of forestry. First, most farm economists have never taken any systematic work in forestry, and second, the foresters have never been able or willing to provide the farm economist with the type of data he needed.

Foresters have been too interested in large-scale commercial forests, which are as a rule disassociated from the farm, to give the farm woodlot much attention. It is not true, as foresters say, that the rules of the game

are the same. Some of the techniques are undoubtedly the same, but information on techniques of forest production is only one set of essential data. There is need for input-output data, annual growth data by species, and annual labor distribution data. This is asking a lot of the forester, but such data are necessary if the farm economist is to do a satisfactory job in integrating the farm woodlot with the farm as a whole.

This text consists of 14 chapters, and only one of these, Chapter 13, "Farm-Forest Plans and Records," is concerned with the problem of integration. The other chapters deal with techniques of production, measuring volume and growth of products, marketing, use of wood on the farm, forestry and wild life, and aids to owners of farm forests. The latter is concerned mostly with federal legislation providing financial assistance to farmers who improve their forests. These chapters are interestingly written and contain much information that is of use to the farm economist. There are seven Appendices.

The chapter on "Farm-Forest Plans and Records" is well done and indicates that the authors realize not only the nature of the problem of integration but its magnitude. For example, they say: ". . . Before a forest plan is prepared, the broader objectives of the over-all farm plan must be determined. As a result of studying the problems and needs of the farm, decisions will be made on the best use of every acre of land . . . , the home need for wood products, and the need for cash income from timber. These facts are basic to the development of the forest plan. Equally basic to the forest plan are information on the amount and seasonal availability of labor from the farm, for hire, or on an exchange basis and information on the type of farm equipment that can be used for woods work and its seasonal availability. All these facts concern the farm as a whole and must be secured before getting facts on the existing timberland or land to be devoted to forest and on markets for timber products. Securing the forest and market data is the second step in preparing the farm-forest plan." (p. 265).

Having stated the problem, the authors proceed to the details, such as dividing the farm forest into units, the principle of budgeting, determining the annual cut, location and timing of operations, method of operation, operations records, and financial records.

These are all essential steps in the integrating process. How do they work out in practice? To this question the authors are silent, and not without cause. Forestry is a long-time enterprise, and one of the most inflexible of the farm business. If data are available on the long-time pull, the reviewer recommends that any future revision ought to have a series, not just one chapter on integration. One gets the impression in reading

this stimulating book that farm economists and foresters are passing up a wonderful opportunity of increasing the farm income by not working together. It is a two-man job.

G. W. FORSTER

*North Carolina State College  
University of North Carolina*

*Migration Within Ohio, 1935-40*, Warren S. Thompson, Miami University, Oxford, Ohio: Scripps Foundation for Research in Population Problems, 1951. Pp. ix, 227, \$2.00.

This monumental study in the redistribution of population within Ohio is based on Census Bureau data of 1940. To measure the extent and character of certain migration phenomena, the 1940 census included information on the 1935 residence of the population. The Census Bureau itself published certain of the migration data, especially those concerned with interstate, intercity, and rural-urban movement. The World War II manpower shortage and the approaching 1950 census resulted in a decision not to proceed with further analysis and publication unless a cooperating agency were found. The Scripps Foundation filled this role, with the Census Bureau doing the tabulation and the Foundation responsible for the analysis and the manuscript work.

The result is this study of "sub-regional migration within one State—Ohio." Similar arrangements were made to have like data tabulated by the Census Bureau for all other states, and other publications have resulted or are forthcoming. But this is the basic study for sub-regional migration.

The mass data for internal migration in Ohio made it possible to analyze the *in* and *out* movements for the central city, the suburban ring, the non-metropolitan urban, the rural-nonfarm and the rural-farm classifications. The analysis was for migration within and between each of these classifications, or any components thereof. Information was available for sex and age composition of these migrants, for marital and educational status, for employment and occupational status, and for income. There are 232 tables, figures, and maps incorporated in the study.

This study reveals the extent, direction, and composition of the various streams of migration. Every chapter has a summary, and the author qualifies his statements, hypotheses, and conclusions rigidly. He warns that "these data relate to Ohio and what is true of migrants within Ohio is not necessarily true of those in other states." This is understandable when Ohio is seen in its peculiar setting—geographically, industrially, and agriculturally speaking. He also points out that the data refer "to the time period 1935-40, when the nation was slowly recovering from a

severe economic depression." Undoubtedly, general applicability of the results must be carefully treated.

The presentation of the data is very highly organized. The major criticism is that the organization of the presentation is that of the organization for tabulation, sort of an assembly line job. Somewhere in the manuscript the author might have had a section other than pure description. He might have reorganized the summaries into a total summary. One is always hopeful that population researchers might add reader appeal for other scientists and for lay administrators. In this the author has not been effective.

The study might have recast some of the results into the already known hypotheses and principles. Ravenstein's laws on migration came to mind again and again as the reviewer studied the publication. Such principles are the meat around which the author might have had a concluding chapter. A job at description need not neglect this phase.

But Dr. Warren is an eminent population expert, and he has made a singular contribution. It is this migration aspect and the consequences which flow from it, that add uncertainty to the prediction and projection of population phenomena. This review should serve as a vehicle to bring together the population experts, including Dr. Warren, and Dr. Joseph S. Davis. Any population figure below the 152 million mark by July 1, 1950, as prognosticated by Mr. Davis (*This Journal* Vol. XXXI, No. 4, Pt. 2, November, 1949, pp. 765 and 768) is a moral victory for the population experts. Internal migration, as immigration and emigration, apparently is a pitfall for the population estimators and "guestimators."

CARL F. KRAENZEL

Montana State College

*Price Policies in the Cigarette Industry*, William H. Nicholls, Nashville: Vanderbilt University Press, 1951, Pp. XIX, 444. \$6.00.

Professor Nicholls has done a scholarly job of research on the cigarette industry and has presented with clarity an economic analysis of monopolistic competition in this industry.

The book is divided into four parts. Part I, the "Introduction," gives a history of the growth of the sales of tobacco products from the time of dissolution of the Tobacco Trust in 1911. Part II, "The Sale of Tobacco Products," traces the development of the modern cigarette industry. The emphasis is on the market behavior of the companies as reflected by their price policies. Part III, "The Purchase of Tobacco Leaf," emphasizes the extent of price competition in the markets for tobacco and the inventory and buying policies of the principal purchasers. Part IV is a discussion of the social control of the industry. It deals principally



with the legal and economic implications of the court decisions in the Tobacco Case of 1946 and with the possibilities of restoring competition to the cigarette industry.

Professor Nicholls traces all of the price changes in the industry from 1913 to the present and demonstrates that agreement on a single price leader for the industry was a result of a long process of trial and error. Price leadership is now associated with absolute price identity of big five cigarette manufacturers.

Advertising plays a vital role in the present structure of the cigarette manufacturing industry. First, it differentiates standard brands from unadvertised economy brands. This differentiation provides the basis for abnormal profits on standard brand cigarettes. Second, the heavy costs of advertising are the most important barrier to entry into standard brand manufacturing. Third, it places great emphasis on type of advertising campaigns and total advertising expenditures among the principal brands. This non-price competition has the effect of largely determining the distribution of sales and, *pari passu*, abnormal profits, among the standard brand manufacturers.

The author maintains that there were abnormal profits in the industry from 1923 to 1950, net income of the big three companies ranging from eight to 23 per cent of net worth each year. The fact that smaller manufacturers were willing to enter into large scale production of economy brands in the 1930's with profit margins on sales only one-third as great as the margins of the big three reinforces this contention. Since the amount of abnormal profits is probably the best available measure of the degree of monopoly power<sup>1</sup> in the industry, a more detailed treatment of this subject would have been desirable.

In the third part of the book, the author indicates his belief in a market-sharing pattern in the purchase of leaf tobacco. He postulates a procedure for dividing purchases among the principal buyers without resort to collusion, i.e. each purchaser estimates the size of the tobacco crop and, based on his current production of cigarettes, buys that percentage of the crop that will maintain his inventory equal to two and one-half years use of tobacco leaf. Statements of officials of the principal firms seem to support this hypothesis. However, these statements alone are not conclusive evidence. It is unlikely that any company could *admit* publicly to any other inventory policy. Under this policy companies purchase an amount of tobacco sufficient to maintain the quality of the product but they do not "speculate" on price changes. Could any company afford to announce to stockholders that it speculates on the tobacco markets? Would borrowers be willing to lend funds to a company

<sup>1</sup> Joe S. Bain, "The Profit Rate as a Measure of Monopoly Power," *Quarterly Journal of Economics*, Vol. LV, February, 1941, pp. 271-293.

following such a policy? The author admits that there isn't enough data on purchases and inventories of the buyers to support his hypothesis that the firms follow an inventory replacement policy.

Professor Nicholls has shown that if the principal purchasers would follow an inventory replacement policy, this would insure a non-aggressive price policy in every crop, except three, in the last twenty-five to thirty years. If it is assumed that each purchaser attempts to buy according to his "needs," independently of what other purchasers estimate as their requirements, the three cases in which an aggressive price policy could result are those for which the total "needs" exceed the supply of tobacco available. It should be pointed out, however, that an aggressive price policy can also result if each of the purchasers' estimates differs greatly from the actual size of the crop; official estimates at the time of harvest have been sufficiently accurate in recent years to make this unlikely.

Even though there are only a few purchasers of tobacco, it is not certain that a near monopsony price for tobacco has resulted. First, even though estimates of the total crop may be accurate, estimates of quantities of different grades of tobacco available are subject to wide errors. Since the various grades are substitutable only within limits, competitive bidding for grades in short supply is possible. Second, price supports on tobacco leaf set a floor under tobacco prices. Third, the price must be high enough this year to bring forth an adequate supply next year.

In the final chapter three methods of introducing competition into the industry are suggested: dissolution, control of advertising expenditures, and revision of cigarette tax levies.

The proposal that the Anti-Trust Division try to obtain, by consent decree, an agreement limiting advertising expenditures of the five largest manufacturers seems a desirable one, *if attainable*. On the other hand, the proposals for adding a progressive Federal tax on all business advertising outlays or an advertising tax based on a firm's percentage of sales of a given class of product seem impractical for the following reasons: (a) such taxes would draw no line between informational advertising and advertising aimed at product differentiation, (b) a limitation on advertising may be inconsistent with economies of scale in some industries, and (c) a tax based on a firm's percentage of sales in a particular industry ignores the whole question of the closeness of substitutes, the heart of monopoly power, and, in addition, leaves the enforcement authorities with the problem of defining what is a product or an industry.

The author does not mention alternative methods of reducing the effectiveness of advertising in setting up barriers to entry into the industry. Two effects of advertising can be distinguished: one is the impression created that one product is superior to another for "phony" reasons; and, two, the identification of a brand with a product (e.g.,

Kleenex with disposable tissues). The first effect has been attacked by the FTC's powers over misleading advertising; in fact, this control has reduced the amount of misleading information about cigarettes. The second effect, identification of a brand with a product is more difficult to control; control depends upon consumers becoming more quality conscious and less brand conscious.

The author proposes as a long-run objective elimination of the cigarette tax; first, on equity grounds, which are incontestable; and second, on the grounds that excise taxes impose an excess burden<sup>2</sup> on consumers as compared with equivalent amounts levied in the form of income taxes. This is based on the effect of the excise tax in distorting the pattern of consumption; in view of the low elasticity of demand for cigarettes, this argument is not applicable to cigarettes. The author's proposal that an ad valorem tax be substituted for the present flat rate tax seems likely to encourage price competition in the industry. Initially the retail price of economy brands would be lowered relative to that of the standard brands. This change in relative prices would probably increase consumption of economy brands. A possible secondary effect would be a reduction in the manufacturers' price of standard brands. The loss of revenue from the ad valorem tax is certainly not inevitable, as is suggested, since the tax rate could be adjusted to produce any desired level of revenue.

WILLIAM A. FRANK\*

*U. S. Bureau of the Budget*

<sup>2</sup> M. F. W. Joseph, "The Excess Burden of Indirect Taxation," *Journal of Economic Studies*, VI (1939), pp. 226-231.

\* The views expressed in this review do not necessarily reflect the official position of the Bureau of the Budget.

\* LIST OF DOCTORAL THESES COMPLETED  
IN AGRICULTURAL ECONOMICS, 1951\*

<i>Name and Institution</i>	<i>Title</i>
Gerald Robert Abbenhaus University of Illinois	Locational Changes in the Food Processing Industries Between 1939 And 1947
Wells Merrill Allred Cornell University	Analysis of Highways in Rural New York
A. J. Ashe Cornell University	An Economic Analysis of Large Dairy Farms, New York, 1949-1950
Merton B. Badenhop Purdue University	Seasonal Costs of Producing And Marketing Fluid in the Knoxville, Tennessee, Milkshed, August, 1948-July, 1949
Elmer Frederick Baumer Ohio State University	Formulas for Pricing of Milk to Producers in Ohio
Sherwood O. Berg University of Minnesota	An Economic Analysis of Production Credit Associations in the State of Minnesota
John T. Buck University of Minnesota	An Economic Analysis of the Shift from Cream to Whole Milk in Minnesota Cooperative Creameries
Frank A. Buckley Texas A & M College	A Generalized Land Use Study of the San Jacinto River Watershed of Texas
William Taylor Butz Pennsylvania State College	Adaptation of the Theory of the Firm to the Operation of a Single Enterprise Dairy Farm in Northeastern Pennsylvania
Thomas Frank Carroll Cornell University	Agricultural Development in Central Chile
Tirtha Prasad Singh Chawdhari University of Wisconsin	A Plan for Agricultural Economic Developments in the Province of Bihar, India
Russell Lee Childress Cornell University	Grade Qualities of Potatoes in Retail Stores
David Andrew Clarke, Jr. University of California	Costs, Pricing, and Conservation in Wholesale Milk Delivery in Los Angeles
Elliott Smith Clifton Iowa State College	Objective Carcass Grade Specifications for Slaughter Steers

\* Received before April 25, 1952.

<i>Name and Institution</i>	<i>Title</i>
Warren Eugene Collins University of Illinois	Methodology in the Measurement of Fluid Milk Consumption And Factors Affecting Demand
Lloyd Howell Davis Cornell University	An Examination of Public Policies Relative to Lands Submarginal for Full-Time Commercial Farming
Thomas Edgar Doak Cornell University	Factors Affecting Annual Milk Production
John Parry Dodds Iowa State College	Market News Dissemination in Iowa
Leslie Edward Drayton University of Wisconsin	Marketing Fruits And Vegetables in Southeastern Wisconsin
Ralph Allen Eastwood Cornell University	Economics of Raising Broilers And Costs And Margins of Slaughtering Poultry in Fifteen Cooperative Wholesale Poultry Slaughter Plants
Mahmoud Ahmed El-Shafie University of Wisconsin	Population Pressure on Land And the Problem of Capital Accumulation in Egypt
Merrill Brown Evans Ohio State University	Some of the Physical And Quality Factors to be Considered in An Improved System of Buying And Selling Hogs
Charles E. French Purdue University	Labor Utilization in Receiving Rooms of Indiana Milk Plants
John Clifford Frey Iowa State College	Some Obstacles to Recommended Land Use Practices in Western Iowa and Means for Overcoming Them
Ernest M. Funk University of Wisconsin	Maintenance of Quality in Shell Eggs by Thermostabilization
Riley Harrison Kirby Cornell University	An Analysis of Population Growth As Related to Freedom from Want
Robert Christian Kramer Michigan State College	An Economic Analysis of Pre-Packaged Meat Merchandising with Particular Emphasis Upon Sales, Consumer Reaction, and Operational Efficiency
L. John Kutish University of Wisconsin	Truck Regulations Forming Barriers to the Marketing of Wisconsin Dairy Products



<i>Name and Institution</i>	<i>Title</i>
William E. McDaniel University of Minnesota	A Study of Technological Change And Its Effect Upon Production And Cash Expenses from 1910-1949 on South-eastern Minnesota Dairy Farms
John Leo McGurk Cornell University	Farm Management Adjustments in Tompkins County, 1907 to 1947
James Franklin Miles Cornell University	The Supply And Utilization of Milk in the Three Principal South Carolina Markets, Charleston, Columbia, and Greenville
Joe Rankin Motheral University of Wisconsin	Progress of Land Tenure Adjustments in A Family Farm Area of Texas
Perry Fred Philipp University of California	An Economic Analysis of the Diversified Agriculture of Hawaii
Kenneth E. Ogren University of Minnesota	An Analysis of Consumer Demand for Fresh Citrus Fruits, Frozen Concentrated Orange Juice, And Selected Canned Fruit Juices
Russell Oscar Olson Iowa State College	Economics of Feed Utilization with Special Emphasis on Risk and Uncertainty
Newton Mack Penny Cornell University	Peanut Marketing in Georgia
John C. Redman University of Kentucky	Economic Considerations of Grain-Roughage Substitution in Feeding for Milk Production
Addison Doyle Reed University of California	Improving California Poultry Management
Frederick Mallory Schrader University of Illinois	The Demand for Meat in Canada
Stanley Cabell Shull Cornell University	Retailing of Fresh Fruits And Vegetables in Baltimore Independent Stores
Harriet Schulman Siegel Michigan State College	The Application of Multiple Factor Analysis to the Aggregate Demand for Dairy Products
Theodore J. Sielaff University of Minnesota	An Economic Study of Rural Electrification in Minnesota
Sydney Dalton Staniforth Iowa State College	Analysis of the Effects of Uncertainty on Resource Use And Income

<i>Name and Institution</i>	<i>Title</i>
Clyde Everett Stewart Iowa State College	Alternative Methods of Obtaining Adequate Resource in the Development of Irrigated Farms
Robert Cone Suter Cornell University	A Detailed Cost Study of Methods of Spraying Apples, New York, 1949
Earl Raymond Swanson Iowa State College	Agricultural Resource Productivity And Attitudes Toward the Use of Credit in Southern Iowa
Alexander Swantz University of Minnesota	Economic Effects of Federal Regulation of Fluid Milk Markets with Special Reference to the Minneapolis-St. Paul Market
Frederick R. Taylor University of Minnesota	An Economic Analysis of Quality Deterioration in Minnesota Egg Marketing
Proctor Thomson University of Chicago	The Productivity of the Human Agent in Agriculture: An International Comparison
Andrew Vanvig University of Minnesota	An Economic Study of Farm Organization with Special Reference to Cropping Systems on the Heavy Soils Area of the Red River Valley
Donald James Watson Cornell University	A Business Management Study of Selected Fruit And Vegetable Processing Companies in New York State
Quentin Mecham West Cornell University	Some Alternative Sampling Techniques in the Measurement of Farm-Business Characteristics
Vincent Irving West University of Illinois	Evaluation of Certain Systems for Differentiating Market Qualities of Soybeans
Leroy A. Wilhelm Purdue University	The Influence of Certain Technological Changes on the Nature and Efficiency
Joseph H. Yeager Purdue University	Economic Considerations in Terracing and Related Practices on Farms in Western Indiana
Clifford H. Zuroske Purdue University	A Study of The Application of Industrial Management of Agricultural Enterprises

## AMERICAN FARM ECONOMIC ASSOCIATION ANNUAL MEETING

The annual meeting of the American Farm Economic Association will be held at the University of Illinois, Urbana, Illinois from the evening of August 27 to the afternoon of August 30.

Visitors will be housed in one of the relatively new and beautiful girls' dormitories. Rates will be from \$2.25 to \$3.00 per night depending on the number per room and the number of nights in residence. In addition, there will be a small charge for towels and soap.

Meals can be taken at the Illini Union Cafeteria or elsewhere at the option of the visitors.

Information on the program, and later information on the accommodations will be sent direct to the membership. Requests for reservations may be made to Prof. G. L. Jordon, 305 Mumford Hall, Urbana, Illinois.

## INTERNATIONAL CONFERENCE OF AGRICULTURAL ECONOMISTS

The Eighth International Conference of Agricultural Economists will be held at Kellogg Center, Michigan State College, East Lansing, August 15-22, 1952. Theme of the conference will be "Economic Aspects of Food and Population." Attention also will be given to related problems, such as economic objectives of FAO, Point Four, and the Colombo Plan; agricultural efficiency; land tenure; international trade; and the relation of farm policies to international affairs.

A tour of the Midwest is being arranged primarily for interested foreign participants. It will begin at the end of the conference and end at Urbana in time for the American Farm Economic Association meeting.

The United States Council has agreed that United States participants who are not members of the International Conference of Agricultural Economists shall enroll as members and pay a membership fee of \$10 for the period ending August, 1952 which will entitle them to a copy of the Proceedings of the Eighth Conference. Those desiring to enroll as members should write to the Secretary of the American Council, Joseph Ackerman, Farm Foundation, 600 S. Michigan Avenue, Chicago 5, Illinois.

Accommodations for most American and Canadian participants will be in a nearby new girls' dormitory at a cost of approximately \$7.50 per day. Other participants will be housed mostly in the Kellogg Center. Meals will be taken at the Kellogg Center and are included in the price. Requests for reservations should be sent to Lawrence Witt, 20 Agricultural Hall, East Lansing, Michigan to insure accommodations.

## NEWS NOTES

As a part of the Mutual Security Agency's technical assistance program for western Europe, some 16 special short courses in selected fields of agriculture are being held this year in the United States in cooperation with the U. S. Department of Agriculture and the Land-Grant Colleges.

Agricultural economists will be especially interested in those planned in farm management and farm credit. The Farm Management short course will be held at North Carolina State College and the University of Kentucky and will center on farm planning and farm work simplification. The Farm Credit short course will be at the University of Illinois and Clemson College, South Carolina. Participants in both short courses will attend the International Conference of Agricultural Economists at East Lansing, Michigan, August 15-22, and the annual meeting of the American Farm Economic Association at Urbana, Illinois, August 28-30. A farm tour in the Corn Belt will be offered in the time between the two conferences. The total time in the United States will be about 10 weeks.

A. J. Ashe, after receiving his Ph.D. degree from Cornell, is working on poultry marketing research as Cooperative Agent in the Poultry Branch of PMA.

Warren R. Bailey has been appointed Leader of the Western Agriculture Section, Division of Farm Management and Costs, Bureau of Agricultural Economics. He will operate temporarily from his field station at Berkeley, California, prior to moving to Washington, D.C., in June.

Sherwood O. Berg, who received his Ph.D. degree from the University of Minnesota last July, is now with the Office of Foreign Agricultural Relations.

Victor Howel Beynon and Edward Mark Carpenter, Professors at the Universities of Bristol and of Durham, England, spent ten weeks in February, March, and April, with the Department of Farm Economics at the University of Kentucky.

Russell W. Bierman, formerly with the Federal Reserve Bank of Richmond, has joined the staff of the Farm Mortgage Section, Division of Agricultural Finance, Bureau of Agricultural Economics.

David A. Brodie, one of the oldest "farm management men," an assistant to W. J. Spillman in the early days of the work in the United States Department of Agriculture, died in Florida on December 29, 1951, and was buried in Winchester, Virginia. For 13 years prior to retirement in 1939, Mr. Brodie was Superintendent of the Farm and Dairy, St. Elizabeth's Hospital, Washington, D.C.

Raymond P. Christensen of the Division of Farm Management and Costs, Bureau of Agricultural Economics, is in England for a year under the auspices of the Mutual Security Agency to work with English agricultural economists on research studies in production economics. Christensen is at Oxford University.

J. B. Claar has joined the staff of the University of Illinois as State Leader of Fieldmen in the Farm Bureau Farm Management Service.

C. Richard Creek, Associate Economist at Colorado A & M College, returned in mid-January from the University of Hawaii where he had been engaged for a year in research in the marketing of eggs and vegetables, while on leave from Colorado A & M.

Albert J. Cross, Farm Management and Costs Division representative of the Bureau of Agricultural Economics at the University of Illinois, has resigned to enter the College of Law at the University.

Lloyd H. Davis, who recently received his Ph.D. degree from Cornell, has joined the University staff as Assistant Professor in Agricultural Economics, where he is assigned to extension work in the merchandizing of perishable fruits and vegetables.

Miss Loa Davis, for the past three years Extension Economist for consumer education in marketing, has left USDA Extension Service for work with the Ford Foundation to start a college of home economics in Pakistan.

M. L. Downen, who has been on a one-year leave of absence taking work toward his Ph.D. degree, returned to the Tennessee Department of Agricultural Economics and Rural Sociology, February 1, 1952.

Louis S. Drake, who received his Ph.D. degree from Michigan State College in March, has returned to the Department of Engineering Administration at the Michigan College of Mining and Technology, Houghton, Michigan.

Lyle Fitzgerald, who has been a Graduate Fellow at the University of Illinois, has joined the staff and is working on livestock marketing research under a Research and Marketing Act contract project.

Walter U. Fuhrman has left the Bureau of Agricultural Economics, to accept a position as the Director of Research in the Bureau of Indian Affairs, U. S. Department of the Interior, with headquarters at Billings, Montana. He will work on the Missouri River Basin investigations.

Martin J. Guerra has transferred from the Bureau of Labor Statistics to the Bureau of Agricultural Economics, where he is working on the consumption of non-food agricultural commodities.

John T. Harris, Assistant Agricultural Economist with the Georgia Experiment Station, is on leave of absence at the University of Illinois.

I. Keith Harrison, formerly with the Bureau of Agricultural Economics, is now an Economist with the Rural Electrification Administration.

Joan Hartford has joined the Extension staff at Cornell, and will assist with the consumer education program in food marketing. She is a graduate of Cornell's College of Home Economics.

Dr. Charles W. Hauck, who has been in charge of Extension fruit and vegetable marketing work in the Division of Agricultural Economics, has found it necessary to retire because of ill health. He is now residing in Columbus, Ohio.

Irwin R. Hedges, who has been on leave for the past two years with the Economic Cooperation Administration in Paris, has resigned from the Farm Credit Administration, to accept a permanent position as Adviser in the Washington office of the Mutual Security Administration.

G. W. Hedlund is now Acting Head of the Department of Agricultural Economics at Cornell University.

Rex D. Helfinstine, Farm Management and Costs Division representative, Bureau of Agricultural Economics, assigned to research on Missouri Basin Development Programs, is now located at Brookings, South Dakota.

Charles B. Hendrix, Assistant Farm Management Specialist in the Tennessee Extension Service, Department of Agricultural Economics, resigned his position effective February 1, 1952 and is now associated with the Tennessee Valley Authority.

William E. Hendrix, formerly with the Georgia Experiment Station,



resigned September 1, 1951 to accept a position with the National Planning Association and the Department of Economics, Duke University, to conduct a study of Agricultural Policy of the South. He is located with the Department of Agricultural Economics, North Carolina State College.

William Henry, formerly at the University of Connecticut, has accepted a position at the University of New Hampshire. He will assume the Chairmanship of the Department of Agricultural Economics on July 1, 1952.

F. F. Hill is now Provost at Cornell University.

Donald E. Hirsch is now Head of the Dairy Section of the Cooperative Research and Service Division, Farm Credit Administration.

F. A. Hughes has been appointed Assistant Professor of Agricultural Economics at Ohio State University to replace Floyd DeLashmutter, retired.

Edgar B. Hurd, Division of Farm Management and Costs, Bureau of Agricultural Economics, has moved from Pullman, Washington, to Washington, D.C., where he will continue work in the Farm Costs and Returns Section.

Dr. V. L. Israelsen, on leave during the past two years with the Federal Housing Administration in Puerto Rico, will return to the Department of Agricultural Economics at Utah State Agricultural College to continue his work in teaching and research on July 1.

Dr. M. M. Kelso, Head of the Department of Agricultural Economics and Rural Sociology of Montana State College, has been selected by the Bureau of Reclamation as one of a three-man panel of economists and engineers to study the procedure of appraising indirect benefits resulting from reclamation projects and to make recommendations for improvements of this procedure.

Riley H. Kirby, after completing the requirements for his Doctor's degree at Cornell University, is teaching agricultural geography at Cornell in cooperation with Herrell Degraff.

Quentin W. Lindsey has joined the Land Economics staff of the Bureau of Agricultural Economics as a cooperative agent working with the Southeast Land Tenure Committee on land tenure research.

Harold T. Lingard has transferred to the Bureau of the Budget, Division of Statistical Standards, from a former position in the Tax Section of the Division of Agricultural Finance, Bureau of Agricultural Economics.

Robert H. Masucci has transferred from the Bureau of Agricultural Economics to the Bureau of the Budget.

Hutzel Metzger, who for many years was President of the St. Paul Bank for Cooperatives, suffered a fatal heart attack last December.

Thomas N. Moss, recently completing departmental requirements for the Ph.D. degree at Michigan State College, is now doing market research on farm machinery with the Ford Motor Company in Dearborn, Michigan.

Herman Myers recently transferred from the Bureau of Agricultural Economics to the Office of Production Analyses of the National Production Authority.

Charles W. Nauheim, recently Farm Management and Costs representative of the Bureau of Agricultural Economics at Brookings, South Dakota, has been transferred to Washington, D.C., for work in the Division's Western Agriculture Section.

T. J. Obal, who has been taking graduate work toward the Ph.D. degree at the University of Illinois, has taken a research appointment with the Joint Committee on the Economic Report in Washington, D.C.

L. S. Paine, Associate Professor in the Department of Agricultural Economics

and Sociology at Texas A & M College, has resigned to accept a position on the staff of the Texas Engineering Experiment Station.

Norris T. Pritchard is on leave from Purdue University for five months, beginning February 1. During this time he will work on a food and milk pricing project for the Cooperative Research and Service Division of the Farm Credit Administration, U. S. Department of Agriculture.

Orlin J. Scoville of the Division of Farm Management and Costs, Bureau of Agricultural Economics, is in England for a year under the auspices of the Mutual Security Agency to work with English agricultural economists on research studies in production economics. He is at Cambridge University.

Caroline B. Sherman, joint editor of *Agricultural Economics Research* and chief publications editor of the Bureau of Agricultural Economics, retired at the end of last October.

Harriet S. Siegel, who recently received her Ph.D. degree from Michigan State College, is now in the Research Department of the Federal Reserve Bank of Chicago.

Dr. P. V. Sukhatme, now with the Food and Agriculture Organization of the United Nations in Rome, Italy, is Visiting Professor of Statistics at Iowa State College during the first six weeks of the spring quarter, which began March 27, 1952. While there, he will give a series of daily lectures in intermediate and advanced survey sampling.

Donald M. Swartz has transferred from the Farm Credit Administration, to the Sugar Branch of the Production and Marketing Administration, U. S. Department of Agriculture.

J. R. Tedford, Assistant Agricultural Economist at the University of Rhode Island, resigned effective March 31, 1952, to take over the family milk plant at Manchester, Connecticut.

Raymond Herman Tremblay has completed requirements for the Ph.D. degree at Cornell University, and is back to work at the University of Vermont as Assistant Agricultural Economist.

Durward B. Varner, former Extension Specialist in Agricultural Economics, has been appointed Director of the Extension Service, Michigan State College, effective September 16, 1952.

Carl F. Wehrwein has finished his assignment in the Economic Cooperation Administration Special Mission to Austria and has returned from Vienna. He is now Principal Economist in the Dairy Branch, Office of Price Operations, Office of Price Stabilization.

Morris L. Weinberger, Agricultural Economist, formerly with the Soil Conservation Service at Upper Darby, Pennsylvania, has transferred to the Land Economics staff of the Bureau of Agricultural Economics, to work primarily on flood control.

Quentin M. West, who recently received his Ph.D. degree from Cornell, is temporarily engaged by the New York State Commission on Agriculture on a study of marketing problems related to marketing regulations and practices in connection with meat, fruit, and poultry.

M. N. Williamson, formerly with the Bureau of Agricultural Economics, stationed at Texas A & M College, has taken up work with the Wage Stabilization Board, at Dallas, Texas.

Martin D. Woodin, Professor of Agricultural Economics, Louisiana State University, will be on leave from March 10 to September 5 to study the sugar

industry in Formosa for the Mutual Security Agency.

Dean E. C. Young of Purdue University, has accepted appointment on the advisory committee on agricultural activities of the Rockefeller Foundation in New York, representing the social sciences on the committee. He joined the committee on a six weeks' tour of South American countries in April and May, studying agricultural conditions in order to make recommendations to the Rockefeller Foundation for desirable programs of action in South American nations.

#### CHANGES IN THE FOOD AND AGRICULTURAL ORGANIZATION

With the move of FAO Headquarters from Washington to Rome in the spring of 1951, the economic work of the organization was materially changed. A number of the veterans in the Economics Division left the organization. These included Howard R. Tolley, Director of the Economics Division from its formation, who became a consultant for the Ford Foundation; Conrad Taeuber, Chief of the Statistics Branch, who joined the U. S. Census Bureau as Assistant Director; David Lubbock, who left his post as Chief of the Food Consumption Branch to return to farming in England in cooperation with John Boyd Orr; and David Lusher, Assistant Chief of the Economic Analysis Branch, who shifted to an economic advisor post in the Office of the Secretary of Interior.

The Distribution Division, which had handled commodity matters, suffered equally heavily, losing its previous director, Frank Northrup, Harold V. Knight (U.K.), Head of the Fats and Oils Section, A. Erickson, Head of the Livestock Section, and G. J. Callister, Head of the Fertilizers Section. Paul Yates (U.K.) previously economic policy advisor in the Director General's office, also left FAO to join the staff of the U.K. Development Corporation.

Harold Vogel, previously Chief of the Production Economics Branch in the Economics Division, stayed in Washington as Technical Assistance Officer for the newly created FAO North American Regional Office in Washington. Gove Hambidge, leader in FAO's editorial and information work, also remained in Washington as head of this office.

With the move to Rome, previous FAO Divisions dealing with agricultural economic matters—(1) Economics, Statistics, and Marketing, and (2) Distribution—were consolidated in a single new Economics Division with three branches, Economic Analysis, Statistics, and Commodities. Mordecai Ezekiel continued as Chief of Economic Analysis; Gerda Blau moved up as Chief of Commodities; and P. V. Sukhatme, noted statistician of India, was appointed as Chief of Statistics. From January to June, Ezekiel served as Acting Director of the Division, and Joseph Orr, previously Deputy Director of the Distribution Division, was Acting Deputy Director. In June, A. H. Boerma, head of the FAO Regional Office in Rome before the change of Headquarters, became Director of the Economics Division. Later Ezekiel was appointed Deputy Director, while Orr shifted to special advisor in the Director-General's office.

Other key new staff in the Division were appointed as follows:

V. Marrama (Italian), as Assistant Chief, Economic Analysis Branch. Dr. Marrama previously served two years with the International Bank for Reconstruction and Development.

Frank Shefrin (Canada), Chief, Demand and Price Section. He was previously with the Canadian Department of Agriculture, as editor of the *Economic Annalist*.

E. L. Burtis (U.S.A.), Chief, Fats and Oils Section. He was formerly with BAE on fats and oils.

T. S. Robertson (U.K.), Chief, Fibers Section.

B. Tumlr, (Stateless), Chief, Production Statistics Section.

M. Klayman, (U.S.A.), Chief, Prices and Index Numbers Section. Dr. Klayman served earlier with BAE, and had just completed his graduate training at Harvard.

A. Arbelaez, (Colombia), Chief, Census and National Statistics Section.

G. W. Barr, (U.S.A.), Regional Economist for Latin America, stationed at ECLA, Santiago, Chile. Dr. Barr was formerly Head of Agricultural Economics at the University of Arizona.

I. Masar, (Turkey), Regional Economist for the Far East, stationed at the FAO Regional Office, Bangkok, Thailand.

E. H. Jacoby, (U.S.A.), Chief of Economic Institutions Section. (This post on land tenure was recently shifted to the Agriculture Division.)

In addition to these new appointments, other key positions in the Economics Division were filled by promotion, as follows:

Paul Kohn, (Austria), to Chief of Trade and Investment Section.

B. Majumdar, (India), to Chief of Asian and African Section.

A. Saco, (Peru), to Chief of Western Hemisphere and Oceania Section.

J. W. Evans, (U.K.), to Chief, Cereals Section.

T. S. Robertson, (U.K.), to Chief, Fibers Section.

E. Mortensen (Denmark), to Chief, Tobacco, Fruit, and Vegetables Section.

P. Sherman, (U.K.), to Chief, Food Consumption Section.

A. C. Janssen, (Netherlands), to Regional Economist, Middle East Regional Office, Cairo.

A. M. Acock, (Australia), to Technical Assistance Officer.

In addition to these changes in the Headquarters staff, a number of economists and statisticians were recruited for FAO Technical Assistance posts in less developed countries. The Americans in this group are R. Burdette, (U.S.), marketing, Chile; L. F. Diehl, (U.S.), sugar industry, El Salvador; J. R. Grant, (U.S.), statistician; Albert G. Black, (U.S.), on agricultural planning, for Israel; J. Kassebaum, (U.S.), economist, and J. C. Coddington, (U.S.), rice marketing, for Thailand; also W. F. Evert, (Canadian), statistician, for Chile; and C. B. Davidson, (Canadian), grain marketing, for Ecuador.

A number of economists have served in Rome for short periods on various special projects as consultants. These included Ruth Cohen (U.S.), Colin Clark (Australia), Chambart de Lauwe (France), Hildegard Kneeland (U.S.), and Lawrence Witt (U.S.).

The work done by FAO during 1950-51 and the publications issued, are summarized in the Director-General's report, *The Work of FAO, 1950-51*, Doc. 51/21, Rome, 1951. The projects on which the Economics Division is now working are outlined in the report *Program of Work, 1952-53*, Doc. 51/16, Rome, 1951, on pages 37-47. In addition to the regular statistical bulletins and yearbooks and commodity reports, the major publication from Economics in 1951 was the *State of Food and Agriculture, Review and Outlook, 1951*, Doc. C 51/20, Rome, September, 1951.

Prepared by Mordecai Ezekiel

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